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PART I.

ORIGINAL COMMUNICATIONS.

ART. VII.—*Observations upon the "Warty Ulcer of Marjolin."* By ROBERT W. SMITH, M.D., M.R.I.A., F.R.C.S., Surgeon to the Richmond Hospital, Professor of Surgery in the University of Dublin, Secretary to the Pathological Society of Dublin, Fellow of the Royal Medico-Chirurgical Society of London, &c.

THERE is a remarkable form of ulceration that attacks the tissue of cicatrices especially, a brief account of which I submitted to the consideration of the members, at a meeting of the Surgical Society of Ireland, in April, 1844, under the title of the "fibrous ulcer." It has, however, appeared to me, upon subsequent consideration, that this appellation is calculated to convey an inaccurate idea of the nature and structure of this peculiar ulcer. I have, therefore, abandoned it upon the present occasion, and have retained the name of "warty ulcer," assigned to the disease by Marjolin, who described the affec-

tion in 1828, in the twenty-first volume of the "*Dictionnaire de Médecine.*"

Mr. Cæsar Hawkins has also given an account of the disease, under the title of "warty tumours of cicatrices" in the nineteenth volume of the Medico-Chirurgical Transactions, published in 1835; he does not, however, allude to Marjolin's description of the ulcer, but expressly says that he is not aware that the disease has been "described in any surgical writings." It is true that Mr. Hawkins speaks of the ulcer as a disease of cicatrices, while Marjolin does not allude to any such connexion; but when we compare with each other the descriptions given by these two authors, it will, I think, be admitted, that the "warty ulcer of Marjolin" and the "warty tumours of cicatrices" of Hawkins are the same disease.

This peculiar and intractable ulcer attacks the tissue of cicatrices, in the great majority of cases, although not invariably. The nature of the original lesion of the skin does not appear to exert much influence upon the occurrence of the subsequent morbid changes, for the ulcer establishes itself with equal frequency in the cicatrices of lacerated wounds, or severe burns or scalds; and numerous examples of it have occurred among soldiers who had received severe floggings. In general, it does not appear until the cicatrix has existed for years, and its progress, when once formed, is usually singularly slow.

As regards the mode of commencement of the disease, it not unfrequently happens that the cicatrix resulting from the original injury is attacked with ulceration, heals, and again ulcerates, the ulcer presenting no remarkable or peculiar character. This may occur repeatedly before the "warty ulcer" is established, but when the latter is once formed there is an end to every process of reparation, although so slow and gradual is the increase of the sore that a very long period frequently elapses before the attention of the patient is sufficiently attracted to it, to induce him to seek for professional assistance. Yet, although gradual, the progress of the disease is sure and

steady; and the ulcer enlarges, not only by its circumference, but also becomes deeper, and engages all the subjacent tissues, until at length, if the disease is situated over a superficial bone, the periosteum becomes implicated, and ultimately the bone itself is absorbed, and fracture is frequently the result of the destruction of the osseous structure.

It is not the general character of the disease to contaminate the lymphatic glands; they frequently become sympathetically enlarged, but I have seen them assume the characters which mark cancerous degeneration in two instances.

The following table, drawn up from the cases published by Mr. Hawkins, from those which I have myself observed, and from other sources, shows the period which elapsed between the receipt of the injury and the formation of the ulcer, as well as the nature of the original injury from which the cicatrix resulted.

NO.	PERIOD AFTER INJURY.	ORIGINAL INJURY.
1	Eleven years,	Flogging.
2	Twenty-seven years,	Flogging.
3	Twenty years,	Scald of the leg and foot.
4	Twelve years,	Wound of the heel, through the tendo Achillis.
5	Twenty-seven years,	Blow on the shin from an anchor.
6	Several years,	Gunshot wound.
7	Sixteen years,	Burn of the back.
8	Several years,	Burn of the fore-arm.
9	Eight years,	Lacerated wound of the leg.
10	Five years,	Lacerated wound of the great toe.
11	Thirty-seven years,	Lacerated wound of the leg.
12	Sixty-one years,	Burn of the leg and thigh.
13	Several years,	Lacerated wound.
14	Twenty-five years,	Contused wound of the leg.
15	Twenty-five years,	Burn of the foot.
16	Eight years,	Flogging.
17	Several years,	Flogging.
18	Several years,	Burn.
19	Several years,	Burn.
20	Fourteen years,	Lacerated wound of the leg.

The formation of the ulcer is frequently preceded by the appearance in some part of the cicatrix of a small, hard, circular tumour, resembling a wart, the surface of which is smooth, and covered by the layer of cuticle which invests the whole of the cicatrix. This small tumour remains free from ulceration and devoid of pain for a variable period of time; and several such tumours may form before the process of ulceration begins. This is not, however, always the case, for in some examples of the disease, the cicatrix presents spots of ulceration, which gradually coalesce, and secrete a thin unhealthy matter. By slow degrees the ulcer enlarges, generally, however, confining itself within the limits of the original cicatrix. Its surface presents a very unhealthy aspect, being in some instances covered with elevations resembling the granulations of a cancerous ulcer; while in other cases, there is no appearance of granulations, but the surface of the ulcer is formed of a number of fibres, of a whitish yellow colour, with a dense, but at the same time somewhat brittle texture, rising above the level of and perpendicular to the surrounding integument, and approximated to each other as closely as possible.

This singular arrangement also exists when the ulcer presents a granulated surface, the seeming granulations, upon close examination, being found to be composed of a collection of these fibres, which are parallel to one another, and perpendicular to the surface from which they spring. They can be easily separated from each other by the point of a probe, the intervals between them being distinguished by well-marked fissures, to the bottom of which an ordinary sized probe can be readily passed. Over the surface of the ulcer is seen scattered a number of small specks of a light yellow colour; these are the extremities of the fibres, tipped with a tenacious purulent secretion. The discharge is thin, purulent, frequently offensive, and occasionally streaked with blood; the pain, at first slight, becomes gradually more severe and more

constant; and a slight degree of hectic fever sometimes shows itself in the most advanced stages of the disease.

The integument surrounding the ulcer is in many instances diseased to a greater or less extent, being frequently studded with small wart-like tumours; it is thickened and divided by fissures, terminating in the circumference of the ulcer, which gradually spreads over the whole of the diseased integument; a fresh portion of the skin then becomes the seat of the same morbid process, and assumes the same warty and fissured appearance, preparing the way, as it were, for the spreading of the sore, which may thus attain a very great size, increasing by its circumference and also becoming deeper by engaging the subjacent fascia, and when seated over a superficial bone, implicating the osseous tissue, producing fracture by absorption, as already mentioned.

Where the ulcer presents a granular surface, it closely resembles that of carcinoma; the granulations are large, firm, round, and liable to bleed when touched; the intervals between them are deep, presenting a foul, yellow or greenish aspect; the discharge is offensive, sloughing frequently attacks and destroys the entire surface, and when this process has ceased, the ulcer gradually resumes its tuberculated or warty aspect.

When from the commencement the ulcer presents the peculiar arrangement of fibres already described, this sloughing process is not so liable to occur, but the discharge is unhealthy, and the surrounding integument is similarly affected, presenting the same fissured aspect near the margin of the ulcer, with here and there a few small wart-like elevations.

It appears to be essentially a dermoid affection, for although after the lapse of a longer or shorter period it engages the subjacent fibrous structure, the latter does not seem to be the original seat of the morbid action of which this remarkable ulcer is the result. I do not think we are as yet in possession of any evidence to prove the origin of the morbid growth in question

from fascia or any of the natural fibrous tissues. Marjolin, when describing the processes which spring up from the surface of the ulcer, remarks, "ces végétations paraissent naître du derme;" and Mr. Hawkins observes that even when of very large size it is still essentially a disease of the skin. In the seventh case detailed by that gentleman, the ulcer, situated in the lumbar region, spread until it was eighteen inches in length and nearly a foot in breadth; even when of this immense size, however, the disease had not implicated the fascia of the back, and except in one or two places where the sloughing had been most severe, the cutaneous basis of the ulcer still remained. In the first case of this affection which came under my own observation, the ulcer, which was about as large as a crown-piece, and situated upon the back of the fore-arm, was excised by the late Mr. Carmichael. It had no adhesion whatever to the fascia, which presented its natural glistening aspect, and was in every respect healthy.

The following is the concise but accurate description of the ulcer given by Marjolin:

"*Ulcère Verruqueux.*—Je désigne par cette dénomination (à laquelle on en substituera une autre, si on la juge défectueuse) des ulcères, dont les auteurs n'ont pas donné une description particulière, et qui présentent les caractères, que je vais exposer.

"Leur surface est formée par une grand nombre de villosités coniques, d'une texture dense, serrée, très-rapprochées les unes des autres, représentant en quelque sorte une velours de laine grossier; ces végétations paraissent naître du derme; l'épiderme qui entoure l'ulcère est épaissi, calleux et même corné, quelquefois divisé par des fissures profondes.

"Ces ulcères, que j'ai observés deux fois à la plante des pieds, une fois à la jambe, et une fois dans l'aine, laissent suinter en petite quantité une fluide visqueux, presque incolore, fétide, qui en se desséchant, forme un croûte épaisse, dure, grisâ-

tre, très-adhérente. Ils sont peu douloureux, ou même indolens, susceptibile de prendre une grande étendue en largeur. Cette maladie assez rare n'est pas encore bien connue"(*a*).

In this brief description, although no mention is made of the occurrence of the disease in cicatrices, I think we can easily recognise the characteristic features of the ulcer, which I have been considering in the preceding pages, such as the peculiar arrangement of the fibres, resembling that of the pile of velvet or plush, the origin of these fibres from the dermis, and the fissured condition of the integument around the ulcer. If we now turn to the account of the "warty tumours of cicatrices," as published by Mr. Cæsar Hawkins, I think it will be admitted that this disease is identical with the "warty ulcer" of Marjolin.

"The tumour, which I call the 'warty tumour of cicatrices,' makes its appearance in some old scar, many years after the injury which has produced it has been healed, whether a burn, a cut, or a laceration of the skin; and it arises equally from a flogging or a scald, in which the skin alone has been injured, or from a cut or gun-shot wound, which injures also the tendons or bones below the skin, and makes a more complicated cicatrix. There appears in the first place a little wart or warty tumour in the cicatrix, which is dry and covered with a thin cuticle, but which soon becomes moist and partially ulcerated, like the warts of mucous membranes, from which a thin and offensive and semi-purulent fluid is secreted. In this stage it gives no pain nor inconvenience.

"In the second stage of the disease the growth of the tumour becomes more rapid, the warty appearance being in some measure lost, a more solid substance projecting from the diseased skin, which bears much resemblance to the fungus of fungus hæmatodes(?); the formation of fresh warts being still seen around the tumour, and preceding the change which has

(*a*) *Dictionnaire de Médecine*, t. xxi, p. 46.

been alluded to. The tumour is very vascular, and bleeds when touched, but its irregular surface still allows the probe to pass through its structure, except where it is most firm."

"After the tumour has become solid and prominent, a new action takes place in it, and the tumour ulcerates and sloughs alternately, with a great deal of pain and suffering, and it is destroyed down to its basis, so as to present the appearance of a foul excavated ulcer, except in its circumference, where the skin is raised, thickened, and everted, and from time to time warts are generated, which again ulcerate and slough, till the patient becomes worn out by suffering, but without having at all the aspect of a person dying of malignant disease ; and on examination of the body no disease of the absorbent glands is found, nor is there, as far as I know, any sign of malignant disease in the interior of the body"(*a*).

In the twenty-fourth volume of the First Series of this Journal, an essay was published by the late Dr. Byron, upon "Malignant Cutaneous Diseases of the Extremities and Trunk of the Body," in which, under the title of "Cutaneous Cancer arising in old Cicatrices," he details at page 55 a case which appears to me to afford a good example of the warty ulcer.

A brief notice of this remarkable ulcer, by Dr. Macpherson, civil assistant surgeon, Howrah, is given in the twenty-first volume of the London Medical Gazette, 1845. This gentleman remarks: "Verrucous tumours of cicatrices are by no means rare among the natives of Bengal. They usually occur in the cicatrices of extensive burns, or in those left by the application of the actual cautery over the spleen, a practice almost universally pursued by natives in the treatment of enlargements of that organ. They are also sometimes found in the cicatrices caused by severe flogging."

When the ulcer is situated over a superficial bone, such as the tibia, the latter generally, but at a remote period, becomes

(*a*) Medico-Chirurgical Transactions, vol. xix.

implicated in the disease (Fig. 2), although the appearances which it presents are by no means uniform. In some instances the medullary canal is opened into by the gradual absorption of the compact structure, without any preceding hypertrophy of the osseous tissue; while, in other examples of the disease, the bone becomes greatly hypertrophied, and acquires an extraordinary degree of density; nor is this enlargement always limited to that portion of the bone immediately subjacent to the ulcer, but in some instances extends to a considerable distance along the shaft.

Corresponding to the ulcer, the compact structure, even although it may have acquired an abnormal degree of density and hardness, is gradually absorbed, and the bone here presents an irregularly excavated surface, each excavation being filled by a packet of fibres, wedged together as closely as possible.

In many of these cases, the bone, although thus absorbed and excavated upon its surface, becomes hypertrophied towards the medullary canal, as it were to strengthen and preserve it against fracture. I have seen the almost complete obliteration of the medullary canal of the tibia thus accomplished, and yet fracture ultimately result.

Case I.—Dennis Boggin, aged 57, was admitted into the Richmond Hospital, in February, 1831, having a large ulcer situated upon the front of the tibia. It was the result of a lacerated wound, and had existed for five years; during this period large portions of the sore healed, but the cicatrix was subsequently attacked by ulceration, and the sore continued to enlarge slowly. At first it presented the characters of a chronic indolent ulcer of the leg, but at the period of his admission into the hospital its surface was covered with a number of firm, wart-like granulations, separated by fissures, and frequently shedding blood.

As it was found impossible to heal the ulcer, the man left the hospital after a sojourn of a few months, and did not return to it until the month of May, 1834; but during the intervening

period the disease had spread considerably, the ulcer being now upwards of six inches in length and nearly four in breadth; its centre was deeply excavated; it yielded an offensive matter of a very unhealthy character; and the tibia had been absorbed to such a degree, that twelve days before the second admission of the patient into the hospital, it broke across while he was walking.

The margin of the ulcer was irregularly studded with small, round, wart-like tumours, composed of fibres, and separated from one another by distinct fissures, many of which were fully a quarter of an inch in depth. The veins of the leg were enlarged as far as the knee-joint, and lancinating pains extended from the ulcer to the groin, where the glands were enlarged, painful, and hard. The patient's health was now much impaired, his strength gone and his sleep broken; his countenance was sallow, and his whole aspect evinced great depression.

The limb was amputated above the knee-joint, but shortly afterwards the patient was attacked with cough; dyspnœa and purulent expectoration then succeeded; diarrhœa of an obstinate character and accompanied by severe pain in the umbilical region followed; and the case terminated fatally upon the fourteenth day after the operation had been performed.

The amputated limb was minutely inspected, and a vertical section then made through the centre of the tibia and of the ulcer. The bone was found to be immensely hypertrophied, the enlargement not being confined to the situation of the ulcer, but extending at least two inches both above and below it; neither was it limited to the front of the bone, but affected its entire circumference. In the vicinity of the fracture the compact tissue was half an inch in thickness, and the medullary canal so encroached upon as to be nearly obliterated.

Corresponding to the central and deepest portion of the ulcer, nearly two inches of the tibia were altogether destroyed, and the end of each fragment had become smooth, rounded, and conical. The intervening space was filled up by the mor-

bid structure composing the ulcer, the white fibres of which, arranged in parallel lines and at right angles with the axis of the limb, reached nearly to the deep fascia of the back of the leg.

The intestinal mucous membrane was vascular in a high degree, and the lungs presented the anatomical characters of the third stage of pneumonia. The inguinal lymphatic glands, as already mentioned, were enlarged, and their section exhibited the white colour, the dense structure, and the fibrous aspect so constantly observed in scirrhous degenerations.

Case II.—Richard Carty, æt. 58, was admitted into the Richmond Hospital under the care of Dr. Hutton, with a large warty ulcer, situated over the lower third of the front of the tibia. He stated that about thirty-seven years ago a cable had been violently dragged across the front of his leg, lacerating the skin and producing a large ulcer, which, maintained in an irritable condition by the intemperate habits of the patient, remained without healing for twelve months. At the expiration of this period it healed, but continued so for only six months. It alternately healed and ulcerated about ten times during a period of thirty years. The last attack of ulceration occurred about four years before his admission into the hospital, and the patient has been gradually losing the use of the limb.

When he was admitted the leg and thigh were observed to be much wasted, and the heel retracted: the ulcer was about four inches in length, of a light pink colour, and very painful. There was a thin, offensive discharge from the surface of the sore, which presented a singular appearance, being composed of the extremities of fibres which had sprung up from the bottom of the ulcer, at right angles with the plane of the leg, parallel to each other, and collected into small wart-like tumours, with intervening deep and well-marked fissures. The fibres were, however, quite distinct from one another, and easily separable by the point of a fine probe, while the fissures admitted of the introduction of an ordinary-sized probe down to

the bottom of the ulcer. Of late there had been frequent bleedings from the surface, and stinging pains, especially severe at night.

After some time fruitlessly employed in giving a trial to a great variety of local applications, the limb was amputated; the case, however, proceeded unfavourably; abscesses formed in the stump, diarrhœa of a most obstinate character set in, and the patient died within two months after the performance of the operation.

The examination of the amputated limb showed that the compact structure of the tibia, which had been in contact with the fibres of the ulcer, was totally removed, the medullary canal exposed, and its cells infiltrated with purulent matter. The structure of the abnormal growth itself was exactly similar to that noticed in the preceding case. There was no morbid deposit found in any of the viscera.

Case III.—Mrs. K——, æt. 45, towards the close of the year 1835 received an injury of the great toe from a piece of timber falling upon it and tearing off the nail. A troublesome ulcer resulted, which healed and broke out again several times during a period of three years. In 1838, during a severe storm, part of the house in which she resided in the country was blown down, and a portion of the wall falling upon her foot produced a lacerated wound of the toe which had been previously injured.

The ulcer consequent upon this second lesion never healed, and in 1840 she consulted me as to the propriety of removing the part. At this period the extremity of the toe was much enlarged and of a globular form (Fig. 4); its entire surface was in a state of ulceration, and divided by deep fissures, which circumscribed a number of small wart-like tumours, of a pale pink colour, and made up of distinct, slender, and parallel fibres. The integument posterior to the ulcer also presented numerous fissures; the discharge was unhealthy; the pain was not severe while the limb was at rest, but in walking the patient suffered

considerably. There was no glandular enlargement, and her health was not impaired.

I removed the toe at its articulation with the metatarsal bone; the wound was healed in a week, and there was no recurrence of the disease. The woman died of fever about seven years after the performance of the operation. A section of the amputated part exhibited the peculiar arrangement of fibres (Fig. 5.) already described as characterizing the warty ulcer, but the distal phalanx had totally disappeared; there was no vestige remaining either of it or of the termination of the tendons of the flexor or extensor muscles of the toe.

The peculiar distribution of the fibres, which constitutes so remarkable a feature of the disease, is accurately shown in Figure 1, which represents the appearances disclosed upon making a vertical section of the morbid growth, in a case in which amputation below the knee was performed by Mr. Colles in Steevens' Hospital. The disease occurred in the cicatrix of a lacerated wound of the leg. The arrangement of the fibres in parallel lines, perpendicular to the plane of the integument, and their collection into packets separated by fissures more or less deep, are faithfully delineated.

With respect to the nature of this remarkable affection, my experience leads me to say that it is undoubtedly a form of cutaneous cancer, and to dissent from the opinion of Mr. Hawkins, that it does not "produce any contaminating influence upon the absorbent glands, and has no tendency whatever to re-appear in a distant and unconnected part of the body"(*a*).

It may not, perhaps, possess all the properties of malignant disease in such a degree as to justify us in ranking it with those formidable growths, which not only change all contiguous textures into a structure analogous to themselves, but likewise constantly contaminate the absorbent system, converting the lymphatic glands into a similar heterologous production,

(*a*) *Loc. cit.* p. 20.

and which possess a strongly marked reproductive character, exercising upon the entire system a baneful and destructive influence, manifested by the formation in remote parts, and in internal organs, of a structure similar to that of the original local disease. It may not, I say, possess *all* these attributes in a high degree, it may be "entirely local in its origin," but, nevertheless, it belongs, in my opinion, to the class of cancerous diseases, and is capable of contaminating the lymphatic glands, as is proved by the first case which I have detailed. That its removal by operation may be succeeded by the appearance of malignant growths in a distant part, the following example demonstrates.

Case IV.—A female, æt. 60, was admitted into the Richmond Hospital, under the care of the late Mr. Carmichael, for an ulcer upon the inner side of the left heel, about two inches in length, and one and a half in breadth, which had commenced to form about three years previous to her admission. She stated that for a long period there had existed, in the situation now occupied by the ulcer, a horny elevation somewhat resembling a corn, which she was in the habit of paring from time to time, whenever the pressure of her shoe rendered it uneasy.

About three years before she presented herself at the hospital, it began to become painful, and soon afterwards small warty-looking growths sprung up from its surface, slowly extended themselves, and yielded a thin unhealthy discharge. By slow degrees the ulcer enlarged, until it attained the size represented in Figure 3, and gradually assumed the appearances described in the preceding pages, as characteristic of the "warty ulcer" of Marjolin. The patient then applied for advice to Mr. Adams, who, believing the disease to be of a malignant nature, declined performing any operation for its removal, although at this period the woman's aspect was healthy, and there was no glandular enlargement to be detected either in the groin or elsewhere.

A few months subsequently she was admitted into the hos-

pital, under the care of Mr. Carmichael; in the mean time, the ulcer had ceased to enlarge by its circumference, but had become more painful, and the fibres of which the wart-like tumours were composed, had grown exuberantly, being in some parts of the surface of the sore fully half an inch in length, and so delicate as to bend by their own weight: they were of a light yellow colour, and from the fissures at their roots there issued an offensive discharge.

The whole of the morbid structure, with a portion of the surrounding integument, was excised, and the exposed surface, which bled profusely, was cauterized. During the healing of the wound, which was of course tedious, nothing remarkable occurred; and when cicatrization was completed, the woman left the hospital, and resumed her usual occupations.

About eight months, however, after the performance of the operation, she was re-admitted with a globular tumour in the left groin, of the size of a small orange, the malignant character of which was evident. It was the seat of frequent attacks of lancinating pain; the integument which covered it had assumed a dusky red colour; enlarged veins ramified over its surface, and it was highly elastic to the feel, communicating to the fingers a sense of fluctuation. Her health had now given way; she was unable to rest at night, and, from being a person of a cheerful disposition, had sunk into despondency.

After her admission, the progress of the tumour was rapid; the skin assumed a lurid aspect, became attenuated, and an opening formed, from which a fungous growth sprung up, which yielded an unhealthy discharge, and bled occasionally. Death soon followed, after which the size of the fungus diminished at least one-half. A section of the tumour exhibited the usual and well-known characters of encephaloid growths.

The question will naturally suggest itself to the mind of the reader, has the structure of the "warty ulcer" been examined in the field of the microscope? Upon two occasions, I have had the nature of the morbid growth in question carefully in-

vestigated by Dr. Lyons and by the late Dr. Houston; neither of these gentlemen, however, although practised in the use of the instrument, were able to detect the characters which modern pathologists have assigned as those of cancerous formations. Dr. Lyons stated, that the specimen which I sent to him contained no cells of any kind, nor even nuclei, and that it appeared to him be an example of the lipomatous (fibrous) formation, and totally distinct from cancer or any of the allied forms of malignant disease.

This result is, of course, opposed to the opinion which I wish to maintain, but it appears to me to be a result which, if correct, proves what is of great practical importance, namely, that a morbid growth may not possess the anatomical structure believed to be characteristic of cancer, and yet may be capable of contaminating the system through the medium of the absorbents, of re-appearing in a distant part after operation, and of destroying life in the same way as diseases confessedly malignant.

The result of my observations of this peculiar ulcer leads me, therefore, to consider it as a cancerous disease, but I agree with Mr. Hawkins in thinking that it is malignant only in the lowest degree. I infer that it is of a cancerous nature from its consisting of a new structure, which is capable of converting the surrounding integument into a similar tissue,—from its power of contaminating the lymphatic glands, as manifested in the first case which I have detailed,—and from its capability of recurring in a distant part after the removal of the original disease, as in the instance last described; but, upon the other hand, its remarkably slow progress, the number of years during which it will continue, without contaminating the system, and the extreme rarity of its re-appearance after operation, induce me to coincide in the opinion, that it is that form of cancer which, as I have before said, possesses these attributes of malignant disease in the lowest degree.

Whether this opinion be correct or otherwise, or whatever

Fig. 1.

Fig. 2.

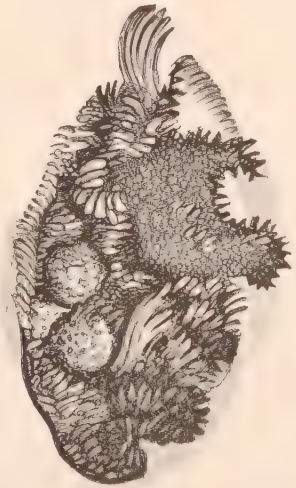

Fig. 3.

Fig. 4.

Fig. 6.

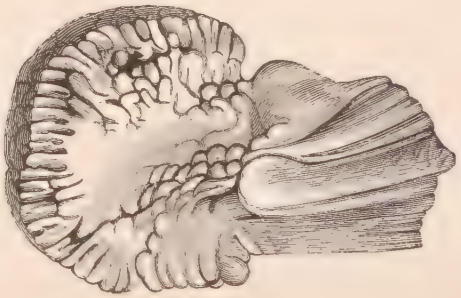

Fig. 5.

may be the true nature of the disease, it will, I imagine, be admitted that there are but two modes of treatment likely to be attended with success; the entire of the morbid structure must either be removed by operation or destroyed by some powerful caustic; the adoption of one or other of these methods, as well as the description of operation proper to be performed, must depend upon the particular circumstances of each individual case, for in some instances the surgeon is compelled to have recourse to the severe measure of amputation, while in others the excision of the ulcer is adequate to accomplish a cure; and, again, examples of the disease occur in which the efforts of surgery are necessarily limited to attempts to destroy the morbid growth by caustic.

When the disease has attained to such a size as to render excision impossible, or where it has deeply implicated a subjacent bone, the surgeon is justified in having recourse to amputation, if the situation of the ulcer admits of it, and there is nothing in the state of the system to forbid the performance of the operation; but when the ulcer is of moderate size, has not extended to any great depth, and is so placed as to admit of excision, this mode of treatment may be adopted with a well-grounded confidence that it will prove effectual; but, before performing the operation, the surgeon should carefully examine the state of the integument around the ulcer; and should it be found to present the warty or fissured aspect already described, it should be included in the excision, otherwise the operation is not likely to be permanently successful.

Should the situation of the ulcer preclude the possibility of amputation, and its extent forbid our having recourse to excision, we must either abstain from any interference with the disease, which would probably be the more prudent course, or else attempt its destruction by caustic; but I cannot say that I have ever seen this mode of treatment productive of permanent benefit. Strong nitric acid was repeatedly applied to the ulcer represented in Figure 6, but it did not appear to induce any

salutary change. In this instance the disease occurred in the cicatrix of a lacerated wound of the leg, received thirty-five years previously.

Were I to attempt the cure of the disease by caustic, I would feel inclined to place most reliance upon the chloride of zinc, the efficacy of which in destroying cutaneous cancer has been highly extolled by Dr. Canquoin of Paris(*a*), and likewise by Dr. Ure. The pain produced by the application of this powerful caustic is of the most intense description, but, according to Dr. Ure, is in a great degree under the control of opium, and generally ceases altogether in twenty-four hours. It is employed in the form of a paste, and the advantages ascribed to it over other caustics are, that it is more active, more certain in its effects, that it produces no constitutional disturbance, that the depth of its action can be regulated, that it does not spread, and that the eschar caused by it separates early, usually in from eight to twelve days. A full account of the mode of preparing the paste, and of employing it, will be found in the seventeenth and eighteenth volumes of the London Medical Gazette, by Dr. Ure, who objects, however, to its being made as recommended by Dr. Canquoin, with wheaten flour, the vegetable albumen contained in which, by combining with the chloride, will interfere more or less with its corrosive action; he has, therefore, substituted pure anhydrous sulphate of lime, which, when mixed with the chloride of zinc and a few drops of water, forms a paste resembling putty. The plaster of Paris of the shops can seldom be procured sufficiently pure for the purpose.

(*a*) *Mémoire sur un nouveau Mode de Traitement des Affections Cancéreuses*, aris, 1835.

Art. VIII.—*On Acute Inflammation of the Prostate Gland.*

By John Hamilton, Surgeon to the Richmond Hospital.

There is no more serious complication in gonorrhœa, than inflammation of the prostate gland. The pain and frequent efforts to pass water are in the beginning very distressing, and when the swelling of the inflamed gland causes retention of urine, life may be, and often is, endangered. The following are examples of the disease.

Case I.—In January, 1850, Major B. applied to me; he has had gonorrhœa for the last few weeks, which was on the decline, though the discharge was still thick and yellow. He had used cubebs and a zinc injection, when the discharge suddenly stopped, and at the same time he experienced uneasiness about the perineum and anus, and a frequent desire to pass water, which kept him awake all night. In the day time the pain and uneasiness were so great, that he could not bear to sit still for five minutes together. On examination I found that *no pain was caused by pressure in the perineum*, but when I pressed deeply with the point of my finger just before the anus, in the direction of the prostate gland, I gave him much uneasiness. On introducing my finger into the rectum (which was unusually difficult, from the spasm of the sphincter ani), and pressing upwards, the pain was very acute, and lasted some time after the finger was withdrawn. The prostate was slightly enlarged and very hot. From the effects of leeches to the perineum, a hip bath, ten grains of Dover's powder with two of calomel at bed time, and an oil draught the following morning, he became nearly well, and in three days was quite so.

In the next case we have retention of urine, in addition to the other symptoms.

Case II.—I went, with Mr. Moore of Anne-street, to see a young gentleman who had been taking a large quantity of cubebs in frequently repeated two-drachm doses for gonor-

rhœa. The discharge stopped, but he became affected with frequent desire to pass water; the efforts were very painful, and scarcely a drop came away. He suffered from pain in the perineum and in the anus, but the perineum was not tender. On passing the finger up the rectum I could feel the prostate enlarged, very hot, and very tender; the bladder was distended with urine. After the application of leeches to the perineum and the administration of tartar emetic had failed to relieve the retention of urine, I tried to introduce, first a silver, and then a gum-elastic catheter, number 10 size, but could not, on account of the resistance offered by the swelling of the parts near the neck of the bladder, and partly from strong spasm. I succeeded, however, with a small gum-elastic catheter, number 3, without the stilet, and drew off about a quart of water. The instrument required to be passed the next day, after which the symptoms subsided, and as they did so the gonorrhœal discharge returned freely. A step further, and suppuration would have taken place in the prostate gland, as occurred in the next cases.

Case III.—*Gonorrhœa; Retention of Urine; Abscess in the Prostate Gland.*

A young man, captain of a vessel, came to me, December 8, 1847, with one of the gentlemen in Messrs. Ward and Pring's establishment. He had gonorrhœa three weeks before, and three days ago, after having experienced some uneasiness in the perineum, he got retention of urine; he was then in Holyhead, and the water was drawn off by a surgeon there. He could not pass water after that, and came over in his vessel to Dublin, still labouring under retention, with the exception that, by great straining, a few drops came. There was also incontinence,—a little urine dropping constantly away from him, keeping his shirt quite wet. This proved that the muscular mechanism at the neck of the bladder had become deranged.

When I saw him there had been this sort of partial reten-

tion for two days, and the bladder could be felt enormously distended. I drew off three quarts of slightly turbid urine with a gum-elastic catheter without the stilet. There was a slight hitch as the instrument was passing over the neck of the bladder.

The next day, as he had passed scarcely any water in the mean time, I introduced the instrument again, and drew off about two quarts. Both on this and on the previous day he suffered the greatest pain after the withdrawal of the instrument, so that he nearly fainted, and was obliged to lie down for some time. Was this in consequence of the last drops of urine going over a raw and abraded surface in the affected portion of the urethra? The third day he told me he had passed a little water at night, but that in the morning he could not pass any, and in striving to do so some matter came from the urethra; and while sitting at stool a few minutes after, a large quantity of yellow matter, a tea-cupful at least, had come away from the urethra; that he felt relieved by this, but still could pass no water. The abscess had now certainly broken into the urethra. On the sixth day, some time after I had introduced the instrument, he again passed a good deal of matter,—about a wine-glassful at once, showing that the opening had not been sufficiently free to prevent a fresh accumulation.

On the seventh day I drew off a pint of rather turbid urine. Though he passed water with great difficulty, he was greatly improved in health. The last four times, I used a full-sized silver catheter, as I experienced some difficulty in passing the gum-elastic catheter without the stilet. There was a hard, cord-like feeling of the urethra in the perineum, as if the inflammation of the prostate and neck of the bladder extended some way along the urethra. The gonorrhœal discharge had ceased from the time of the retention. After this I saw no more of this young man, but heard from his friends that he got quite well.

In this case the finger, introduced with difficulty through

the anus, felt the prostate considerably enlarged, hot, and tender.

In the foregoing examples it will be observed, that the gonorrhœal discharge stopped as the inflammation of the prostate arose. From this fact, many authors, among the rest, Sir B. Brodie, have regarded it as a metastasis from the urethra to the prostate. I believe that the inflammation extends rather along the urethra to the prostate, and when this is inflamed it acts as a derivative to the irritation of the urethra, as inflammation of a neighbouring organ generally does on a similar principle. Inflammation of the testicle has the same effect on the gonorrhœal discharge.

Case IV.—*Prostatic Abscess from Gonorrhœa. Case reported by Dr. Frazer.*

Andrew Kelsh, aged 40, was admitted into the Richmond Hospital, February 19, 1846, under the care of Mr. Hamilton. He complained of great pain and difficulty in passing water, and had a pale yellow gonorrhœal discharge. A month ago he contracted the disease. About a week before admission, after sitting on the wet seat of a car during a journey of fourteen miles, he became affected with pain and a burning sensation in the glans penis, with inclination to pass water every half-hour. The stream gradually diminished in size until three days before admission, when he could only pass water in drops with great agony and smarting, and with burning pain in the hypogastrium and glans penis. He had constant desire to go to stool, but only from a feeling of uneasiness in the perineum, which caused him to change his position frequently. The discharge of a few drops of urine gave him ease for a few minutes, but the anxiety to pass it soon returned. The day before he entered hospital Mr. Hamilton passed a catheter, and drew off a pint of high-coloured muddy urine; and on admission the same quantity was taken away, with great relief to his sufferings.

February 20.—On examination by the rectum a large tu-

mour, formed by the enlarged prostate, was felt. The left lobe was most swollen and tender. This swelling of the prostate blocked up the rectum, and was hot and painful. There was strong spasm of the sphincter ani. He was directed to take a pill of five grains of calomel at night, and a draught of the infusion of roses and sulphate of magnesia in the morning. A warm bath was ordered at bed-time, and the urine was directed to be drawn off twice a day by the gum-elastic catheter.

21st. A silver catheter was used, and was found to pass with less difficulty. It caught against something while passing into the bladder, and on withdrawing it some dark grumous pus followed.

24th. Since last report the catheter has been introduced night and morning, and each time was followed by the discharge of pus. The prostate is diminished in size, the left lobe softer, and the discharge of pus (very different in appearance from the pale yellow gonorrhœal matter) is more abundant. In the evening, while at stool, he passed four ounces of urine: it was mixed with pus.

26th and 27th. The secretion of urine, which was diminished during the first violence of the attack, is becoming more plentiful: he passes it pretty well, but as he is unable to empty the bladder completely the catheter is still passed night and morning. The pus continues to flow, sometimes about a teaspoonful coming away at once. The catheter always gives the sensation of being caught about the prostate by a little hitch, as if by a membrane; though still painful, its introduction is much less so than it was. The prostate is much diminished in size. The sphincter ani still contracts with strong spasm around the finger.

March 2nd. Four or five ounces of water remain in the bladder, after he has made his utmost efforts to empty it perfectly. A little thick pus yet follows the urine.

9th. He improved rapidly after the last report. He can

now empty the bladder perfectly; the prostate is almost reduced to its natural size, and his only complaint is a little gonorrhœal discharge, for which he was ordered a copaiba mixture. He was dismissed this day.

The pus in the two preceding cases made its way out by an opening into the urethra: this is the most common way. In the following case it took a different route.

Case V.—*Gonorrhœa; Abscess of the Prostate Gland, making its way out in the Perineum.*

— Stivan, aged 20, a native of Bristol, a sailor, got gonorrhœa three months since; six weeks after, when it began to decline, he suffered from pain in the perineum, which became swollen near the anus. Both the swelling and pain continued to increase, and when admitted into the Richmond Hospital, January 5th, 1848, he seemed to be suffering dreadfully, and to be greatly depressed in mind and strength: he could scarcely stand upright, and could only sit leaning to one side. He had cough, quick pulse, and perspirations, and he had lost flesh so as to resemble a man in the advanced stage of phthisis, but careful examination discovered no physical signs of that disease. From a feeling that there was something in the rectum, he had been constantly taking purgative medicine. There was a large swelling, extending from the posterior part of the perineum backwards, rather to the right of the anus, and there was a cord-like ridgy feel for some distance along the urethra. The tumour was very tender and fluctuated, but the matter was evidently deep-seated, and there was no sign of pointing. I passed a straight bistoury deeply in, a little anterior and to the right of the anus, and a large quantity of yellow matter flowed out: the opening was a very free one. The next day he was wonderfully improved; pulse 80, and tongue clean; he had regained his spirits, and had no cough; the opening was contracted, and there was very little discharge.

January 11th. The fifth day after, the opening was nearly

closed. I passed my finger up the anus, and could feel, a little to the right of the mesial line, between the rectum and urethra, a hard ridge running up as far as the prostate, which felt very little more than its natural size.

14th. To go out; just well; the little sore of the opening to be dressed with simple dressing.

The occurrence of inflammation of the prostate in gonorrhœa, is evidenced by a train of symptoms referable to the position of the gland. Deep-seated pain at the lower part of the perineum, and about the anus, shooting forwards along the penis; frequent desire to pass water, with much straining, difficulty, and pain in the attempt; at length there is retention, the patient with great effort being able to pass only a few drops, while the bladder can be felt distended over the pubis. After the retention has existed some hours, incontinence of urine sometimes ensues, from the over-distended bladder, and the mechanism at its neck being impaired by the inflammation; this adds greatly to the patient's distress from his clothes being kept constantly wet and foul. At first there is generally no tenderness in the perineum (as there always is in inflammation of Cowper's glands), but if pressure is made with the point of the finger deep in, just before the anus, pain is complained of. Considerable spasm of the sphincter ani exists, so that much resistance is made to the introduction of the finger into the rectum; when it is accomplished, the prostate can be felt enlarged, hot, and very tender. There is one symptom mentioned by most authors which I have found to vary, viz., tenesmus, or a desire to pass something which was in the rectum. In some cases it has not been present at all; in others, the patient has been anxious for purgative medicine, from the conviction that there was a lodgment in the bowel. The amount of enlargement is also not uniform; in some cases, where the pain was excessive, the increase of size has not been proportional. In Kelsh's case the prostate was so much enlarged that the rectum was blocked up by it; suppuration had, however, taken place, and

the swelling was unequal, the left lobe being the largest. After matter has formed, the swollen prostate feels soft, and, after pressure for a short time, the point of the finger sinks a little into the tumour, as if there was some œdema; this I have noticed several times. At no time, either before or after suppuration, does the gland feel as hard as in the senile enlargement. The matter may be either in the substance of the prostate, a single large abscess, as in suppuration of one of the tonsils, and then it usually makes its way into the urethra, which I believe to be the best and safest exit, or the suppuration is in the loose areolar tissue about the prostate, and then the matter works its way out at the lower part of the perineum, near the anus, where the perineal fascia offers the least resistance. I have seen a case where the suppuration was diffused in this areolar tissue round the prostate, and which caused death. A number of small purulent depots have been found in the substance of the gland; it is a bad form of suppuration, and apt to degenerate into a very intractable chronic disease, chiefly distinguished by uneasiness at the neck of the bladder, and a distressing desire to pass water; partly from the inability of completely emptying the bladder. Some turbid urine, containing flakes of lymph and pus globules can be drawn off by the catheter after the patient has just urinated.

It might be feared, that when, as in the first case, the abscess opens into the urethra, the urine in passing along would enter the sac of the abscess, distend and burst it, and cause extravasation of urine, as sometimes happens in cases of stricture. We do not, however, find it to do so, the circumstances in fact not being parallel. In stricture, the opening of the abscess is into the dilated part of the urethra, behind the stricture; and the urine meeting with the obstruction, and getting through it more slowly than it comes from the bladder, distends this dilated part behind the stricture, and, rushing into the abscess, distends it too; and should the force of the bladder be very great, the walls of the abscess burst, and extravasation ensues. Whereas,

in inflamed prostate, the opening of the abscess is usually on the top or the fore-part of the swelling, particularly when made by the point of the catheter; the urine, therefore, passing through the obstructed part must flow so slowly that there is no danger of its forcibly entering the sac and rupturing it, and if any does enter, it will gradually flow out again with the matter.

For a long time after the acute symptoms have subsided, a degree of irritation will, in many cases, remain behind, a too great frequency, pain and scalding in making water, with an uneasy feel about the neck of the bladder and the rectum. A young medical man who had an attack of acute gonorrhœal prostatitis nearly two years before, consulted me for these symptoms; I found the gland still larger, hotter, and more tender than natural. In these cases a number of small shreds are observed in the urine.

During the first stage of acute inflammation of the prostate, the urine is rather scanty, high-coloured, and acid; in cases where the bladder cannot be completely emptied, the urine left behind, when drawn off, is usually, as might be expected, alkaline, rather turbid, and in the late stage, after suppuration, free pus is obvious to the naked eye, or the microscope detects numerous pus globules. In ordinary cases we do not see the ropy mucous deposit streaked with blood, so constantly found in inflammation of the bladder; a fact which, coupled with the complete or incomplete retention, and the diminished stream of urine in prostatitis, will serve to distinguish it from the former disease, with which the frequent and painful micturition would tend to confound it. The local examination with the finger in the rectum will aid in confirming the diagnosis. The freedom in passing water, previously to the attack, will distinguish it from stricture. The obstruction to the catheter also feels different from that of stricture. Boyer says that the instrument passes readily as far as the prostate, and then suddenly meets with an impediment: I have not found it so. In the very acute cases,

attended with retention of urine, the inflammation and swelling extend forwards along the urethra, and cause a gradual and rather soft obstruction to the passage of the catheter, long before it arrives at the prostate. Its entrance into the bladder is much facilitated by the finger in the rectum raising the point up, to mount over the enlarged prostate. A small-sized gum-elastic catheter, without the stilet, should be used; even this from the engorged state of the urethra, though passed gently, often causes smart bleeding. A moderate-sized silver catheter will, however, sometimes answer better. I have frequently felt a little hitch to the instrument as it entered the bladder, which might be from the point becoming entangled in the edge of the opening of the abscess, or that the enlargement of the prostate had raised a fold of the mucous membrane across the opening into the bladder, as we not unfrequently find in the diseased prostate of old men. When there is any difficulty in passing the catheter, where the retention requires its frequent introduction, where there are much straining, and pain, and frequency, and where a large portion of the water still remains behind after micturition, it is much better to leave the instrument in, even if only for a few hours; it allays the forcing and consequent irritation. In the following case it did much good.

Case VI.—*Inflammation of the Prostate Gland from Gonorrhœa; Retention of Urine.*

August 22, 1849. Patrick Arnold, æt. 32, a strong, healthy-looking man, and temperate, was admitted into the Richmond Hospital. Six or seven weeks since he contracted gonorrhœa, for which he has taken purges and a mixture apparently containing turpentine, and continued to do so up to the last week. The discharge had nearly ceased: only a clear drop in the morning. On Thursday last he had stoppage of water, not complete, as he could pass a little with frequent efforts. On Sunday there was complete retention, and the urine was drawn off with a gum-elastic catheter with the stilet in. On Monday it was

again drawn off, and on Tuesday by myself, with a silver catheter, No. 9, which went in easily. Between these operations he could pass a little water, having incessant calls to do so. The urine drawn off was very high-coloured, and not more than half a pint, the secretion evidently being scanty. The finger introduced by the rectum felt the prostate considerably enlarged, the size of an apple, smooth, hot, rather hard, and tender; the sphincter ani tight, and the rectum hot; but he is not sensible of a feeling of weight in the rectum, or any uneasiness there, or in the perineum. The tongue is furred, and the bowels are confined.

Twelve leeches were ordered to be applied to the perineum, and he was directed to take three grains of blue pill three times daily. I passed a No. 9 gum-elastic catheter with the stilet, and having drawn off the water, the instrument was left in. A little blood and thick grumous matter came from the urethra, as if a small abscess had been opened. The next day it was reported that the instrument had slipped out in the morning, but he says it has been of great use to him, as he has not now the same constant desire to pass water. The leeches by some mistake had not been applied. His bowels have been opened. The pills were ordered to be repeated, and he was directed to have a hip bath.

August 24th. The leeches were applied, and he has taken nine pills, but there is no soreness of mouth. He feels quite well; is able to pass water perfectly; and is free from more frequent calls than natural. But the prostate can still be felt considerably enlarged; softer, however, less tender, and diminished in size one-fourth. There has been no discharge, except a little thin and gleety matter. The next day he was dismissed cured.

Art. IX.—*An Essay on Puerperal Fever, with Suggestions for an Improved Method of Treatment.* By William Faussett, M. B., F. R. C. S. I., Medical Superintendent of Clontarf and Raheny Dispensary.

In most diseases of the epidemic class, the worst types of each species are wont to arise when individuals are congregated together. For this, as well as perhaps other reasons, puerperal fever usually presents itself in large hospitals under its most fatal and intractable phases. It might, therefore, seem unreasonable to expect that any line of practice, however successful it should prove in the detached or sporadic forms of this affection, would be attended with similar results under different and less favourable circumstances. The generally fatal tendency, however, of puerperal fever, is so well known to the profession, as to render apology unnecessary for offering any reasonable suggestions for an improved mode of treatment.

Assuming that the most marked recognised difference between the epidemic and sporadic forms of puerperal fever consists in the relative proportion of sthenic action developed in each, including of course corresponding states of the vascular and nervous systems; and that the sporadic disease in this point of view is associable with fevers of the inflammatory type and the more active forms of visceral congestion, while the epidemic resembles maladies of the asthenic or typhoid order; it follows, that, whatever amount of antiphlogistic treatment be deemed advisable in the one, a lesser amount ought to be required in the other; and that if it be possible successfully to treat the one without draining from the circulation any undue quantity of the vital fluid, it becomes in the highest degree feasible to apply the principles of such treatment to the other, or asthenic form of the disease.

The exact duration of an attack of puerperal fever cannot of course be accurately defined, it must be widely different under different circumstances; but if we may predicate in a

given case that, from the peculiar character of the symptoms, those destructive processes which most endanger the integrity of the organism, such as effusions of lymph and straw-coloured serum, with glueing together of the intestines, &c., are likely to set in early, our treatment should be such as to keep pace with the sometimes extraordinary rapidity of the disease: indeed it may be safely maintained, suitable regard being had to the patient's strength and other circumstances, that nearly all the resources of our art should be brought to bear on the case before an epoch arrives when recovery, by reason of organic change, is placed beyond the pale of hope: the truth of this position will, perhaps, in the main, be admitted by every practitioner. But is it practicable or possible, by any method of treatment, to arrest in its first stage the further progress of puerperal fever? The statistics of the disease sufficiently attest the mournful truth that, in a large majority of cases, no method of treatment hitherto adopted has proved adequate as a means to this end, for, though a fair and candid examination of the records which have been published, may lead us to admit that this object has occasionally been attained, as in some of the cases related by Campbell, Lee, and others, equal candour obliges us to observe, that the treatment leading to such results has signally failed in the hands of equally skilful and accomplished practitioners. We are driven therefore to the inevitable conclusion, that the discrepancies which have arisen in the experience of different physicians, must be owing to varieties in the disease itself, "there being," as Dr. Collins remarks, "great diversities of character in the disease in different situations, and even in the same situation at different periods."

The following imaginary illustration gives a fair view of the practice which has hitherto been, and still continues to be relied on in this very fatal disorder. A woman, about the second day after her confinement, is seized with a shivering fit, followed by fixed pain and tenderness over the uterine region, quick pulse, and other symptoms denoting the advent of puerperal fever.

There being a somewhat tympanitic state of abdomen, she is ordered the usual dose of turpentine and castor oil, together with the application of fomentations. In a few hours more it is found that the medicine has operated well, and that the stupes, which relieved the patient's sufferings, were kept diligently applied; but still the pain is excessive, the tenderness on pressure greater, and becoming more diffused, and the pulse quicker than before. She is now, perhaps, ordered to be bled to a certain number of ounces, or, if not considered a subject for general bleeding, she is freely leeched, and the leeching is followed by the continued application of stupes, or by immersing the patient in a warm bath; and at the same time mercury, most probably calomel, is prescribed in tolerably active doses, every third or fourth hour, either alone, or in combination with some other agent. The next morning it is reported that the leeches have bled well, that the bath or stupes have been resorted to, and that the calomel has been given at regular periods; still the patient is no better. Some two or three, or perhaps four dozen of leeches are now directed to be applied to the abdomen, hot fomentations to be diligently and constantly used, and the calomel to be continued in the same doses, but at shorter intervals. The patient is seen again at night, and again the following morning, and some modification of the same treatment is pursued(*a*). From certain changes in the character of the pulse, and the other symptoms, further leeching may be deemed inadmissible, and the calomel, having induced diarrhœa, is

(*a*) Dr. Collins, in his valuable reports of puerperal fever in the Dublin Lying-in Hospital, states that "in numerous instances ten, twelve, fourteen and sometimes sixteen dozen leeches," were applied in the course of a single case; "the warm bath being at the same time repeatedly used, with the almost constant application of stupes in the intervals;" and that calomel, which he frequently combined with ipecacuanha, was in some cases exhibited to the extent of "300, 400, and even 500 grains and upwards."—pp. 394–5. Dr. Collins, however, saw no advantage to accrue from administering calomel in scruple doses, which did not equally result from more moderate quantities repeated.

stopped, an opiate given, and mercurial inunction substituted. Such is, perhaps, a fair specimen of some of the more leading points of practice usually relied on in this formidable malady, there being of course certain deviations to meet the views of different practitioners, and to suit the circumstances of each particular case and the prevalent type of general disease. Now although in the strict sense of the word this is a rational practice, is to a certain extent justified by *post mortem* appearances, and in some varieties of the disease has proved most successful, it unfortunately happens that it too often falls short of attaining the desired end, death ensuing much more frequently than recovery.

In the hospital form of puerperal fever the cause of the great mortality must be in a great measure attributed to the congregating individuals together under circumstances which favour its development, perhaps by multiplying the subtle and mysterious agency which originally produces the disease. An interesting illustration of this remark occurred in two extensive dairy establishments in the neighbourhood of Dublin, some few years ago, when the distemper prevailed extensively amongst horned cattle. I was informed by the proprietor of one of these concerns, a gentleman of great observation, learning, and intelligence, that every newly calved cow was, as a matter of course, sure to be attacked by the malady, and generally in a more malignant and intractable form than the other cattle. One most remarkable instance he related to me of a cow which ate during the night her usual quantity of food, yielded in the morning her usual supply of milk, and, being soon after noticed to labour under disease, was dead in the evening, the autopsy exhibiting the same morbid appearances (viz., solidification of the lung, with effusions of lymph and serum into the pleural cavities) which were usually found in other instances, and to which I at the time took occasion to call the attention of the profession in a paper published in the Dublin Medical Press. By information derived from other sources, I had reason to know that cattle

kept at pasture in the fields usually lingered longer than those which were stalled in crowded sheds, although the ultimate issue in all was very much the same.

The fact of puerperal fever becoming greatly aggravated in its hospital forms, did not long escape the enlightened observation of the very able masters who, from time to time, have presided over the Rotunda Hospital; and the great improvements in ventilation, cleansing, scouring, and fumigating, which were introduced under their auspices, have, no doubt, effected more than medicine ever could to abate the ravages of this pestilence.

I will now detail briefly two cases of puerperal fever, of the sporadic form, which fell lately within the sphere of my own practice; first describing that which assumed apparently the milder character of the two, and which I happened to see almost at its very outset.

Mary Chambers, aged about 30, was confined of her first child on Wednesday, the 26th December, 1849. The day after her accouchement, being under no medical care, and rather badly attended to, she considered herself strong enough to sit up in bed, and even got out of bed and walked across the room; just at this time she experienced a chill, and on the same night was awakened out of sleep by pain in the lower part of the abdomen. The pain was at first only occasional, but towards morning became so severe that a messenger was despatched for me. A short time before my visit she was given a grain of the muriate of morphia, which was sent her from the dispensary, and this, together with a turpentine stupe, was said to have somewhat abated the pain. There existed, however, a considerable amount of tenderness over the uterine region, and at one particular spot on the right side this tenderness was so great that she could not endure even slight pressure; the tongue was coated with a drab-coloured fur; the face looked a little flushed; the pulse was only 86, but sharp. I ordered her two grains of calomel every half-hour, and a grain of muriate of morphia to be taken

with the first, and also with the fourth dose: but the medicine was not given with desirable punctuality. In the course of the day, however, ten doses of calomel, and two grains of muriate of morphia, not including the dose given before my visit, were exhibited. At 10 o'clock at night the medicine was, by neglect, discontinued; she passed, however, on the whole, a better night than the preceding, and suffered less from pain; and next morning the report was that she slept some; bowels twice freed; had slight perspiration; face looks pallid; tongue still furred; pulse a little more frequent, but less sharp than yesterday; and tenderness on pressure less over the right portion of the uterine region, but more extensively diffused through the abdomen than before, insomuch that pressing the hand near the umbilicus caused her to exclaim, that "the pain shot through her back." There was as yet no appearance of milk in the breasts. The lochia were diminished, but not altogether suspended. The strong tincture of iodine, freshly prepared, was now freely and copiously applied by means of a good sized brush, all over the uterine region, the whole surface between the umbilicus and pubis, and as far as the crests of the ilia, on either side, being thickly coated, so as to produce a dark brown colour, particularly at the part where tenderness was greatest. A few drops of croton oil were at the same time diligently rubbed over the upper portion of the abdomen, between the umbilicus and the ensiform cartilage, and two grains of calomel directed to be administered every half-hour; a grain of muriate of morphia to be given with the first, and also with the fourth dose.

Half-past 9 o'clock, P.M., has taken since morning twelve doses of calomel and two of muriate of morphia, and is now in a gentle perspiration. Tenderness on pressure greatly relieved; pain quite gone; the mouth is not affected by the calomel, but a strong mercurial fetor emanates from her person; the tongue, which was furred in the morning, looks now quite clean, and there is abundance of milk in the breasts since evening. She

states that the liniment, namely, the tincture of iodine, smarted her a good deal for about half an hour, but that ever since she has been free from pain. A slight eruption is apparent where the croton oil was rubbed in. The mercury was now discontinued.

30th. Bowels frequently acted on during the night, with griping, which disturbed her sleep; but there has been no return of pain in the uterine region. Slight tenderness on pressure, however, still continuing, the tincture of iodine was again freely applied, and five grains each of mercury with chalk and of Dover's powder, administered; and, in the event of further disturbance of the bowels, or griping, or want of sleep, a grain of muriate of morphia was directed to be taken at bed-time.

31st. Slept all night without the opiate; mouth affected with mercury; she is quite convalescent.

The second case, though in order of time the first, was not, like the preceding one, noted down at the instant; this is to be regretted, as it happened to be the more remarkable of the two. The details, however, having soon after been committed to paper, may, as far as they go, be strictly relied on. On Saturday, 6th October, I was sent for to visit Mrs. L., in her ninth confinement. All her previous labours, except the one immediately preceding, in which there was an arm presentation, had been natural, and of short duration. On the present occasion labour pains set in about 7 o'clock, P. M., and she was delivered of a full-grown child in about four hours, nothing remarkable having occurred throughout her labour, except that she suffered severely from cramps in the lower extremities. Prior to her confinement she had a troublesome cough, and, as this still continued, she took some cough mixture on Sunday, the day after; on Monday she complained of having suffered from after-pains, and, to relieve these, her bowels being free, an anodyne draught was directed at bed-time; early on Tuesday morning I was apprized that, notwithstanding the draught, she suffered all night from pains which yet continued. Apprehending still

nothing more than after pains, to which she told me she had always been subject, and being at the time particularly engaged, I prescribed three-quarters of a grain of muriate of morphia, to be repeated, if necessary, in the course of two hours. On my arrival, at 1 o'clock, P.M., I was at once struck with the altered appearance of my patient since the preceding day. The decubitus was prostrate, the face somewhat flushed, the countenance expressive of much despondency, which was the more remarkable, as she was naturally cheerful; skin intensely hot and parched; pulse about 130, and hard, and the tongue deeply coated with a reddish brown fur. She told me that she had been suffering dreadfully all night from severe unremitting pain over the womb; the tenderness on pressure in this region was most exquisite; she could not bear the slightest touch; coughing greatly increased her agony, and she could not venture to turn on her side. The uterine discharge had diminished greatly, but had not entirely disappeared; there was milk in the breasts; she had a shivering fit some time previously to the pain seizing her. I now became somewhat alarmed for my patient's safety, and inclined to reproach myself for not having abandoned other engagements to see her at an earlier hour. As she was rather a robust woman, my first impulse was to abstract blood from the arm. However, on due consideration, I resolved on a different course. I directed about eight grains of calomel to be taken at once, to be followed by an ounce of turpentine and a dose of compound powder of scammony, containing compound cinnamon powder; hot stupes to be applied to the abdomen, and in about an hour afterwards to commence taking two grains of calomel every quarter of an hour. This treatment, with an occasional half-grain dose of muriate of morphia, was persevered in, though most irregularly, and not without many lengthened interruptions, till next day. What the exact number of doses given of the calomel might have been I am unable to say, not having at the time made a record of them; the whole quantity of calomel administered, however, did not exceed half a drachm, and the quan-

tity of muriate of morphia, including the dose in the morning, was about three grains. In addition to these medicines, after the bowels had been freed, there were given, conjoined with the calomel, but at longer intervals, some five or six fractional doses *of tartarized antimony* (about the one-twelfth of a grain to the dose), together with a little nitre and as much compound cinnamon powder as caused it to rest easy on the stomach. These remedies, although irregularly administered,—four doses perhaps in rapid succession, then a cessation, then four doses more, and so on,—had, nevertheless, a remarkable effect upon the patient. Next day, by 11 o'clock, the fever had greatly subsided; the pulse had fallen to 90; the tongue was much less furred, and rather moist; the heat of skin moderated; abdominal tenderness greatly diminished, and the pain nearly gone. The mercury was now discontinued, but with an injunction to resume its use should the amendment not be permanent; and a dose of castor-oil was prescribed. The patient's convalescence was from this time uninterrupted, except that, the oil not having acted on the bowels, she felt in the evening of the same day great uneasiness, and sense of oppression at the præcordia; she was therefore directed to take a second dose of turpentine, which gave her speedy relief. Her mouth was affected with the mercury. In this case the first dose of calomel exhibited was designedly a large one, as from the advanced state of the symptoms it was considered desirable, if possible, to make, in the first instance, a distinct impression on the disease.

These two cases contrast strikingly with each other. The former was that of a primiparous female, in whom, contrary to what many might expect, the symptoms were by no means so acute as in the other; the suffering from pain, and tenderness on pressure, having, on the whole, been moderate, and the pulse, though sharp, having risen but little above the ordinary standard. She was, however, seen at a very early stage of the disease, and though it commenced stealthily, it was not, per-

haps, on that account the less dangerous. The subject of the latter case had become attacked in her ninth confinement, and in her the fever was of a sthenic character, the pulse ranging high, the skin being hot, and the suffering, even from the slightest pressure, almost intolerable.

It seems deserving of notice that in both cases a somewhat similar course, at least of internal medicines, modified to suit their circumstances respectively, should, within a very short time, have subdued all the more threatening and alarming symptoms, and have placed the patients in a great measure out of danger.

It is no less worthy of remark, that this desirable termination was attained without either bleeding or leeching, although the treatment was not carried out with that regularity and precision which would have been desirable, but which unfortunately cannot always be secured in dispensary practice. A question of greater interest arises from these cases, when considered together, than attaches to either of them separately; and that is, would the practice of exhibiting calomel in the same rapidly repeated doses be equally successful, not only in similar cases, but in those of another and somewhat intermediate order, in which, with a fever of low excitement, there existed the same amount of actual disease, but a much greater degree of nervous depression?

I trust it will not be supposed that it is the object of the present essay to deprecate either bleeding or leeching in the class of diseases under consideration. It is my firm conviction that both the one and the other have been, and are likely, in judicious hands, ever to remain invaluable auxiliaries in the treatment of puerperal fever. It should not, at the same time, be lost sight of, that the puerperal state, which may be considered the most helpless between childhood and old age, is essentially *one* of debility, and, as such, *not* favourable for great demands being made on the vital fluid. Bleeding from the arm, in order to exercise a salutary control over local congestion,

should be carried to the extent of making a distinct impression on the pulse, if not of inducing absolute syncope. The routine, and somewhat mechanical practice, therefore, of abstracting blood by the ounce or by the pint, is opposed to the first principles of a rational science; because the precise amount necessary to diminish vascular action in any given portion of the extreme capillary system, must, until ascertained by actual experiment, remain a matter of pure conjecture. If more is specified than the patient be afterwards found able to bear, the consequences will be injurious or dangerous; and if less, it most probably will not fulfil the indication. Laying down general rules, therefore, as to the amount of blood to be abstracted is in every way objectionable. When it becomes necessary to moderate the general momentum of the blood by venesection, or through the medium of the general circulation to act on local congestion, the rule undoubtedly should be to bleed to approaching syncope.

With respect to local bleeding, the application of leeches is open to the objection of doing, if not too little, perhaps too much; whilst the bathing, continued stuping, poulticing, and fomenting, must tend greatly to produce fatigue and exhaustion, as well as in some measure to interfere with the due and regular administration of remedies, which, in these specific forms of inflammation, are, perhaps, more distinctly curative in their effects. While, therefore, there is no denying to leeching an extreme value in relieving local congestion and local suffering, the questions still arise,—may it not in some cases be overdone? —may it not in others be wholly dispensed with? I can here very readily anticipate all that may be said about the prevailing type of disease, as the principle which should in this respect govern our practice. Modern science has not lost sight of this great truth, and certainly the predilections of the medical mind have not of late years been too strongly biassed in favour of blood-letting, for the tendency now is, perhaps, too much to the opposite extreme; but let the prevailing type of disease be

what it may, and the forms of active congestion presenting themselves under it influenced accordingly, the puerperal state is essentially one of debility, and therefore unfavourable for the employment of remedies likely to make violent impressions on the nervous system, or interfere too roughly with the vital functions. Besides which, it is not the amount of inflammation which most endangers the patient's life here, it is its peculiar and specific form; our remedies should, therefore, be chiefly directed to the character of the disease, rather than to the absolute amount of active congestion present, although the latter must be kept within control.

Whatever stress may be laid on *post mortem* appearances, as the unmistakable evidence of pre-existing inflammation, we should not forget that such appearances are sometimes found not merely in the robust, but in subjects the least likely to be affected by active hyperemia, who have been suffering the extremes of destitution and penury, and whose systems may have been reduced to the lowest verge of human existence by diarrhœa, or hemorrhage, or both. I find just such a case detailed by M'Clintock and Hardy, in their valuable work on Practical Midwifery; and such cases, no doubt, constitute the bulk of those in which the disease actually commences before labour sets in. These low forms of inflammation, which would resemble the decomposing of the blood and extravasation of its elements by a chemical, rather than by a vital process, were it not for the evidences of excitement in the vessels themselves, differ as much from idiopathic or traumatic peritonitis, as typhoid pneumonia differs from the more active forms of pulmonary congestion.

As it seldom falls within my own practice to meet with puerperal fever, I am anxious that the plan which has been faintly sketched in the two preceding cases,—viz., that of exhibiting exceedingly active remedies in small but rapidly repeated doses, at the shortest possible intervals,—should be presented to the consideration of those whose wider expe-

rience as obstetricians better entitles them to form an opinion of its suitableness in this formidable disease. I am desirous also that the external agents which were employed in one of the cases should receive a more extensive trial. The tincture of iodine, from the relief I have found it to afford in numerous painful affections, even when connected with deep-seated congestion, I should judge as likely to prove a valuable remedy in the early stages of puerperal peritonitis. It is free from the objection which with good reason is urged against the premature use of blisters, as, so far from increasing, it greatly tends to control and subdue existing irritation. It cannot, therefore, be applied too early in the disease, while the peritonitic affection is yet localized; and it should for this purpose be laid on with the greatest freedom, till the whole or the greater part of the abdominal surface below the umbilicus becomes of a dark brown colour, especially such parts as are most sensitive to pressure. The relief which the patient, Chambers, experienced from this application, was very striking, and I only regretted not having given it a trial in the other female, whose case, however, had occurred previously. Fomenting the abdomen for a quarter of an hour before the iodine is applied will probably tend, by softening and relaxing the skin, to secure a more speedy and certain effect.

Although this remedy has been extensively used in some chronic pulmonary affections, particularly phthisis, I am not aware of its having been previously recommended in the early stages of puerperal or indeed of any other form of peritonitis; yet of its utility as an auxiliary to, and in a great many cases a substitute for leeching, when boldly and judiciously used, and repeated according to circumstances, I am inclined to form very sanguine expectations. Then, with respect to croton oil, this being an agent which for several years past I have employed with the greatest advantage for pustulating the surface of the body in a great variety of congestive diseases, it occurred to me to make trial of its efficacy as a derivative in the

case already described, but at a point somewhat remote from the centre of diseased action. Croton oil, although one of the readiest and most valuable counter-irritants we possess, is certainly open to strong objections, from the accidents occasionally attendant on its use. Not the least annoying of these arises from its well-known tendency to pustulate beyond the limits of the surface to which its application is confined, and for this reason it would be highly imprudent in the case of a puerperal female, as it is indeed hazardous in any case, to employ this active agent in the vicinity of the groins or pudenda, as troublesome excoriations or even sloughing might chance to result. Its application, however, to the central and upper portions of the abdomen, I hold to be of considerable value in both preventing and arresting almost every form of abdominal congestion. I may mention that in dysentery, where, however, other measures were employed, I considered it in several cases mainly instrumental in checking the disease.

Next, with respect to internal treatment. Too much time ought not to be lost in exhibiting purgatives, for although the colon in advanced pregnancy is apt to become loaded with feculent matter,—an incident which may co-operate with other causes in disposing to peritonitis,—it seldom happens that the bowels are not properly and sufficiently evacuated at or about the period of delivery; at least, no case ever comes under my observation where some form of purgative, generally castor oil, is not, as a matter of course, and even sometimes unnecessarily, administered. There can, therefore, be no very essential reason for commencing the treatment of puerperal fever by a purgative. Where tympanitis exists, as it may, independently of any lodgment or remora, turpentine is capable of relieving it, whether it purges or not, for this valuable remedy will often have such an effect even when applied externally. The leading treatment should, therefore, be commenced without a moment's delay, for if, within a certain period, the disease can be arrested, the patient is safe; but let it progress to any great extent beyond this

period, and she may be irrecoverably lost. The distinguishing feature of this treatment, I apprehend, should be the administering small doses of active medicines in very rapid succession, the great and paramount consideration being to seize the disorder at its first advent, and, if possible, prevent its further progress. But, it will be asked, what is the advantage gained by exhibiting medicines in small doses, which will not equally accrue from giving the aggregate of such quantities in a single dose?

The massive structure of the rock, which for ages may have braved the fury of the surf, crumbles beneath the insignificant but importunate dropping of the small constant stream. Nature may be persuaded when she will not be coerced; and physical agents, brought to bear on the disordered functions of our bodies by a succession of gentle reiterated impressions, will often produce specific changes with greater certainty of effect than when made to act with rudeness and force. The effect of the sudden application of cold on an inflamed surface will generally be that of a stimulus; but if, instead of abruptly dashing a quantity of cold water on such a surface, the same amount be suffered to trickle gradually upon it, drop by drop, the effect will be to lower vascular excitement, and lessen irritation. Now, something like this may be occasionally noticed in the internal administration of active medicines; for when exhibited in small quantities made to keep pace with the course of disease, we may sometimes effect in a given time changes which the aggregate of such quantities, administered at once, could not accomplish. A grain of tartar-emetic exhibited under circumstances of general fever, may excite vomiting in the patient; but after the emetic effects have ceased, it is possible the pulse shall be found as quick, and the skin as hot as before. Let the same amount be given in ten or twelve doses, so as to keep within the bounds of absolute emesis, administering the dose every hour, or half-hour, as the case may be, the effect will be to lower the pulse, and moderate fever in

a surprising manner. This is true with respect to mercury also; there are cases in which calomel may be given in large doses with most beneficial results, but puerperal fever, I apprehend, is not one of these:—on the contrary, moderate yet decisive doses, administered in quick and rapid succession, seem better suited to the asthenic, but subtle and insidious swiftness of this dangerous disease. A case like that of Mrs. L. will occasionally, however, occur, where, from the advanced stage of the symptoms, it may be desirable to commence with a rather more than average dose, in order to make, if possible, a corresponding impression in the first instance. Calomel given by the scruple, or in smaller doses, until so much as "an ounce and upwards"(*a*) was administered, has frequently failed to lead to successful results, even when salivation, as sometimes happened, could be effected. Now, although this is a disheartening truth, we should, nevertheless, derive encouragement from the fact that the cases must be rare indeed which end fatally where salivation could be produced in the early stages of the disease, or where the more prominent and urgent symptoms had been subdued by mercury, or in fact by any means. If, therefore, it be admitted as true that when mercury can be administered in the early stages of puerperal fever so as to affect the system, a favourable issue may be expected, who will be disposed to dispute that it is to this our utmost efforts should tend? But is there a probability of our being able to give mercury so as to accomplish this object when we have so often failed in our attempts by every method hitherto adopted? I have no hesitation in stating that our best hope of bringing mercury to bear successfully on the early stages of puerperal fever (and I speak from its effects on analogous states of the system), is by administering calomel in moderate, but decisive, and rapidly repeated doses, combined, when the fever is in excess, with an antimonial,—either James' powder, or else fractional quantities

(*a*) See Collins' Reports, *loc. cit.*

of tartar emetic,—and under almost all circumstances, with a sufficient quantity of opium to prevent a purgative action on the bowels.

With respect to administering an antimonial in even fractional doses, such as one-twelfth of a grain of tartar emetic, it may seem liable to the objection of the stomach being often already in an irritable state; and when this is so to any extent, it should, no doubt, interdict the use of any such agent: but this objection may sometimes be found more apparent than real, simply because the irritability of the stomach in such a case is not contingent on a cause inherent in the organ itself, but depends on a sympathetic or reflex action of its nerves. The same objection has been made to exhibiting tartar emetic in bronchitic affections where the stomach inclines to turn with each recurring paroxysm of cough; but I have frequently found, and perhaps the superiority of a rational over a mere empirical practice cannot be more beautifully illustrated than by this fact, that tartar emetic in such a case, if given at first with some little caution, and suitably combined, will relieve the cough, and, by relieving the cough, exercise the anomalous action of tranquillizing the stomach.

Under any circumstances, however, it is only at the commencement of puerperal fever, and in the more sthenic forms of the disease, that antimony is indicated; and from the amount of vital exhaustion it sometimes produces, it is a remedy, the effects of which require to be closely watched.

I may here mention, that had the patient, Mrs. L., laboured under vomiting and a sick stomach, it is probable that, in place of exhibiting antimony, bleeding to syncope, followed by a full dose of opium, would have been the practice best adapted to prepare the system for the exhibition of calomel. The tendency of antimony to relieve internal congestion by equalizing the circulation, and determining the force of its currents to the capillary vessels on the surface of the body, renders it, when suitably combined, and exhibited, with caution, very often a

valuable substitute for blood-letting in a great variety of congestive diseases, abdominal as well as cerebral and thoracic.

With respect to opium, I believe the best plan is to exhibit a full dose at once, and subsequently repeat it in more moderate quantities, so as to keep within the bounds of narcotism, but at the same time obtain its full sedative effects on the system. For this purpose I am convinced that one of the best, if not the very best preparation, is the muriate of morphia. Besides relieving pain, keeping the bowels in a quiescent state, and tranquillizing nervous excitement, thus directing, as it were, the more specific actions, both of the antimonial and the mercurial on the system at large, opium is well known to exercise a peculiar and somewhat specific effect in preventing, if not controlling abdominal inflammation.

The action which opium directs upon the whole capillary system, as is evidenced by its tendency to produce diaphoresis, and by the remarkable congestions which in cases of poisoning by it are found in the brain and lungs, must tend, when not contra-indicated by the state of these viscera, to create a diversion highly favourable for the relief of abdominal congestion. If the momentum of the blood, however, be greatly above par, the force of its currents should be moderated by venesection, before the exhibition of opium.

That this decisive and rapid mode of exhibiting medicines is that which the exigencies of puerperal fever most frequently require, may be deduced from the fact, that in the epidemic form of the disease, as stated by M'Clintock and Hardy, and other authors, the " inflammation spreads with such fatal rapidity that a very few hours are sufficient for it to pervade the entire extent of the peritoneum."

There are few diseases then, cholera, perhaps, excepted, in which the recovery of the patient so necessarily hinges on the treatment adopted in the first stage. If this be prompt and energetic, and keep pace with the great rapidity of the disorder,

without drawing too much on the vital energies of the patient, we may hope for much better results than when the same or a much greater amount of treatment, so to speak, becomes diffused over a longer period. We know that remedies which act energetically in one stage of a malady, may prove worse than useless in another. Blisters applied too early in inflammatory diseases will often increase and aggravate the inflammation. Mercury given too late in disorders, where it might have been at first beneficial, will run down the patient's strength, and prevent all hope of recovery. In puerperal fever mercury is confessedly a valuable remedy; but once extensive effusions take place into the peritoneum, who can then boast of its efficacy? The first element of success, therefore, in conducting a case of puerperal fever to a favourable termination, consists in measuring our treatment by the probable length of time during which treatment of any kind shall be available; in other words, adapting our measures to the course and progress of the first stages of the disease.

Professor Law, to whom the science of medicine is much indebted for many accurate and judicious observations, published in the fourteenth volume of the first series of this Journal, a paper of great interest, showing "the very small quantity of mercury required to affect the system when exhibited in minute doses at short intervals." The method adopted by Dr. Law is deserving of the highest consideration; it was that of exhibiting one-twelfth of a grain of calomel every hour; and he states that he found "salivation in some cases produced by twenty-four pills, or two grains of calomel," and that "seldom were forty-eight pills, or four grains, required to produce this effect." Dr. Law adverts, however, to "the pertinacity" with which "puerperal peritonitis and cholera resist the operation of mercury," &c.

Dr. Ayre of Hull, whose views on the subject of exhibiting calomel in cholera have, of late, been put so prominently for-

ward, recommends two grains of calomel every ten minutes, as the proper cure for the stage of collapse, to the exclusion of almost every collateral agency.

It will be seen that the method of exhibiting mercury in puerperal fever, put forward for the first time(*a*) in the present essay, differs from the practice both of Ayre and Law; from the latter, by the employment of much larger, though (as compared with the practice of others) small, doses, and at much shorter intervals; and from the former, by the remedy being rather excluded from the periods corresponding with the collapsed stage of cholera, and limited, as much as possible, to the earlier stages of puerperal fever; while most powerful collateral agencies,—venesection and antimonials, in suitable cases, and opium in almost every case, &c.,—are advocated, with the view of favouring the operation of mercury on the system.

Having been led to advert to the subject of cholera, I may mention, that in the course of the last summer, and part of autumn, it came within my province to meet with a large number of cholera cases in the dispensary district of which I have the medical charge; and, though foreign to my present purpose to allude to any observations I may have made on the nature and treatment of this formidable malady, I may, perhaps, hazard the remark, that if there be one disease more than another in which the well-known axiom of "*obsta principiis*" applies with peculiar force, I suppose, by common consent, that disease will be allowed to be cholera. Now *that* which is true of

(*a*) If injustice has been done to any previous writer by the above remark, I am not aware of it. In the article "Puerperal Fever," in Copland's Dictionary of Practical Medicine, to which my attention has been called since the above was written, I find no allusion to any views similar to those which it is the object of this essay to develop; and Dr. Copland's observations, besides being the most recent, are, perhaps, amongst the ablest and most rational that have hitherto appeared on the subject. In some varieties, particularly the more malignant forms of the disease, he recommends camphor as well as opium, and seems to have much reliance on the use of turpentine in the synochoid or intermediate forms.

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cholera I believe to be also true of puerperal fever, with this difference as regards the latter, that the attack generally extends over a longer period, and that, the patient being already under observation, the disorder is more likely to command attention in its first stage.

Further, an analogy which, to a certain extent, exists between these two diseases, would encourage the hope, that if any thing like fixed principles could happily be once agreed upon to determine our treatment of the one, they might possibly issue in the enlightenment of our views in conducting that of the other. Puerperal fever and Asiatic cholera are so essentially unlike in origin, in symptoms, and general pathology, that it appears at first sight fanciful to imagine even a remote resemblance between them; but conceding that their obvious and specific differences are such as to forbid their being classed together in the same category, the following considerations, common to both, are, perhaps, not unworthy of attention. 1st, Both diseases are abdominal; at least the virulence of the "*materies morbi*" seems to be concentrated in the abdomen; serous effusions with lymph taking place into the peritoneum in the one instance; watery discharges from the whole course of the intestinal tract occurring in the other. 2nd, In both diseases there is great vital prostration, yet depletory measures are said to have been tried in both with advantage and success. 3rd, There is in both diseases a fearful tendency to a fatal result within a short period, while, in the more advanced stages of each, all human interference becomes too often nugatory and vain. Lastly, Some of the medicines much relied on in the one disease, have strong claims on our confidence in the other.

It might be possible to trace other analogies between these two fatal disorders; the foregoing seem, however, not wholly undeserving of notice.

To return to the subject of administering mercury in small and rapidly repeated doses; it seems not improbable that a truth of great practical value, and of very extensive application in

connexion with this practice, may hereafter become more fully developed, viz., that *those acute diseases which, by reason of their violence and celerity, most tend to bring organic structures into sudden and imminent danger, may be best treated—sanguineous depletion apart—by small doses of active medicines exhibited in the most conveniently rapid succession :* laryngitis, tracheitis, pericarditis, &c., will be at once suggested as suitable for such practice.

I may here mention, that very lately in a case of injury of the head, where suppurative arachnitis appeared imminent, as well as in other affections, I have tried with advantage and success this peculiar mode of administering medicines; and from some observations I have made on mercury thus exhibited, I am disposed to think that within the narrow limits of the time during which it might be deemed expedient or safe to persist in its use, salivation is *not* a result to be immediately anticipated; on the contrary, that the subjugation of the disease may be often expected *before* salivation; and that in this point of view it is more likely to become an object with us to prevent, than to induce so disagreeable a consequence.

It will be inferred from all that has been now stated, that the first termination of inflammation or resolution, is the object which our treatment should aim at in such a disease as puerperal peritonitis. It will be seen that the measures chiefly relied on for this purpose are not in the general run of cases,—bleeding, leeching, purging, stuping, bathing, and poulticing,—although such means may be often required, and some of them be found useful. It is not the administration of mercury in very large, nor even in moderate doses, the aggregate of which should form an excessive quantity, but in doses of one or two grains every quarter or half hour, so long as may be deemed expedient during the primary stages of the disease, and on the principle that thirty grains in thirty, or in fifteen doses, exhibited during the first few hours of the attack, will, *cæteris paribus*, act

with infinitely greater power than eight(*a*) times the same quantity given during a period extending over eight times the supposed number of hours. It will be observed that antimonials in fractional doses, guarded by an aromatic and an opiate from irritating either stomach or bowels, and exhibited *under observation*, are much relied on for lowering the pulse and equalizing the circulation; and that opium, while exercising its anodyne and sedative effects, is looked to for securing, and, at the same time, qualifying the action of the other medicines; and, lastly, that certain external agents possessing the immense advantage which blisters do not possess, that of being applicable to the first stages of the disease, are put forward as in the highest degree likely to exercise a salutary control over its further progress.

This essay has extended to a far greater length than was at first intended, which must be ascribed to an apprehension of mistake arising respecting the views put forward on a subject of such vast importance.

Amongst the many eventful scenes to which our profession introduces us, few, perhaps, partake of more painful and exciting interest than those which occasionally attend the course of puerperal fever; for sad, indeed, must be the revulsion of feeling, when, after having witnessed the wondrous process by which a fellow-being becomes ushered into life, we are destined to see the strong ties of nature severed, the mother scarcely permitted to look on the fruit of her womb, but, as the blossom has become evolved, the fair plant itself perishes; while, in the righteous Providence of a great First Cause, we see the helpless creature of so many throes and pangs bereft of the source of its sustenance and protection, to be cast on the cold sympathies of an hireling, or left to the chance pity of a selfish or unheeding world. As considerations, therefore, of the highest

(*a*) 520 grains, or more than seventeen times this quantity, have been given in the course of a single case. See Collins' Midwifery, *loc. cit.*

social and moral import combine to enlist the first feelings of humanity in behalf of woman in her state of greatest weakness, at a period when her life is doubly precious, because doubly interwoven with the best interests of society, it would be proportionably unbecoming, as well as ignorant, to insist on the applicability of the forementioned course of treatment to *all* the varieties of puerperal fever. Medical practice must vary with the ever-changing phases of disease, and nothing could be more empirical than to maintain the universality of any rule of practice. A general principle, however, has been contended for, viz., that puerperal fever, to be treated successfully, must be treated promptly in its first stages; and that when mercury is deemed advisable for this purpose, in other words, not contra-indicated by idiosyncrasy or other inherent or adventitious cause, that its exhibition in the manner now prescribed will be found generally commensurate with the peculiar exigencies of this too often fatal disorder.

Art. X.—*Clinical Observations on the Treatment of Urethral Hemorrhage, and of Irreducible Epiplocele.* By James S. Hughes, M. D., F. R. C. S. I., Surgeon to Jervis-street Hospital.

As I conceive it to be the duty of every hospital surgeon to record cases of interest which may occur in his wards from time to time, the following are now published, with their treatment, and the observations which they suggested at the bed-side, trusting that they may be considered capable of affording practical instruction.

URETHRAL HEMORRHAGE.

There is, perhaps, no form of hemorrhage, which, when profuse, causes more alarm to the patient, or proves more troublesome to the surgeon, than that arising from the urethra, especially if it resist the ordinary modes of treatment; and as

great difficulty is at times experienced in arresting the bleeding, when it springs from a part of the urethra beyond the influence of pressure, we cannot be too well prepared to meet such cases by prompt and effectual treatment.

The causes of hemorrhage from the urethra are very numerous; amongst the most frequent, however, may be mentioned those arising from the acute stage of gonorrhœa, rupture of the urethra from falls on the perineum, and the improper use of instruments. When the hemorrhage does not arise from any distinct accidental cause, it may be difficult to find out from whence it proceeds; but experience tells us that, under these circumstances it is occasionally the consequence of malignant disease of either the kidney or bladder.

Of all the sources of obstinate bleeding from the urethra, the most fruitful, perhaps, is that caused by the rough handling of the catheter, either by the patient himself or by an inexperienced practitioner, in cases of diseased prostate gland; examples of which most surgeons have met with, and which, unfortunately, often tend to shorten life. But the most alarming form of urethral hemorrhage I ever saw, occurred lately in the person of a man who presented himself at Jervis-street Hospital, caused by the giving way of some vessels in the urethra during the venereal orgasm. As it is a rare and complicated case, I shall give it in detail:

—— Mullens, æt. 35, a very delicate-looking man, a hatter by trade, presented himself at the Dispensary of the Hospital on May 8th, 1849. The patient was perfectly anemic in appearance, being quite blanched in the face; his pulse was rapid and feeble, and the extremities were cold. He stated that at four o'clock on that morning, immediately after sexual intercourse, he felt the lower part of his night-dress quite wet, and that on inspection he observed a stream of florid blood flowing from the urethra. He left his bed, and, having dressed himself, attempted to stop the bleeding with cloths wrung out of cold water, but without effect, the blood continuing to pour out until his arrival

at the Hospital at nine o'clock, A. M. On examination, I found his shirt and several folds of rags saturated with blood; I then removed some clots of blood from the penis, when a stream of florid blood poured out from the orifice of the urethra. The frænum exhibited no appearance of injury, and there was nothing external to account for the hemorrhage; there was neither fulness nor pain on pressure along the penis, or in the perineum; and the patient had passed water three or four times since the accident.

On questioning him he stated that he had been married for the last eight years, but that previously to his marriage he had suffered several times from gonorrhœa, and that he had been labouring under a frequency of calls, and difficulty in expelling his urine, for about ten years, for which he had not consulted any surgeon.

A middle-sized catheter was now passed four inches and a half into the urethra, where it met with an obstruction; a smaller-sized gum-elastic catheter was then, with some difficulty, passed through a long cartilaginous stricture, a distance of about seven inches, when it was suddenly arrested in its course. Other instruments were then cautiously tried, and as they apparently took the direction of a breach in the canal, as the patient had passed water several times since the accident, and as there was no evidence of extravasation, it was not deemed advisable by Dr. Power (my colleague on duty) or myself to have recourse to violence in attempting to introduce an instrument into the bladder. A full-sized catheter was then passed down to the obstruction, the patient was put to bed, and proper pressure was applied to both the perineum and penis; but although the pressure was assiduously kept up for a considerable time, the bleeding evidently continued, flowing backwards into the bladder, the patient having frequent and urgent calls to make water, which contained much blood and some coagula. Experience having taught me the value of gallic acid as a styptic in affections

of the urinary organs(*a*), I ordered it in the following form: Gallic acid, eighteen grains, and extract of gentian, eight grains; to be divided into six pills, one to be taken every second hour.

Before the patient had taken more than two doses of the gallic acid, the hemorrhage had completely ceased, at which time the presence of the acid in the urine was detected by the addition of the tincture of the muriate of iron. The patient left the hospital of his own accord on the second day, there being no return of the bleeding; and he promised to return in a few days in order to have an instrument passed.

Laceration of the urethra, followed by profuse hemorrhage, as a result of the venereal orgasm is a very rare occurrence, there being few cases of the kind on record, but, although rare, it may lead to very serious results, as we learn from the following case, related by South, in his edition of Chelius' Surgery(*b*).

"I may here mention, that I once saw a case under my colleague, Mr. M'Murdo's, care, in which there was enormous extravasation of blood from the bursting of some vessels in the penis during the act of coition, and the result of which was, that the penis especially, and the perineum, were greatly distended, and he was unable to pass his urine without extreme pain, in consequence of which a catheter was introduced. In the course of two or three days extravasation of urine ensued, and the bladder was punctured through the rectum. Considerable sloughing, not only in the perineum, but also up into the groins, took place, into which incisions were made as needed, and he ultimately, though slowly, recovered."

With regard to the application of pressure to the perineum in cases of hemorrhage from the urethra, there does not now exist in the minds of surgeons that prejudice against it, which

(*a*) In the third volume of the New Series of this Journal I have published a case illustrating its effects in hæmaturia from injury.

(*b*) Vol. i. p. 157.

Sir Everard Home and others improperly entertained on the subject. Sir Everard Home's objection to it was, that, although it arrested the flow of blood externally, it directed it backwards into the bladder, thereby converting, as he said, a case of simple bleeding into one of danger, by the filling up of the bladder with coagulated blood, and probably inducing retention of urine. No doubt the filling up of the bladder with coagulated blood in these cases is a most unpleasant complication; and numerous cases of urethral hemorrhage have been published by Guthrie, Brodie, and others, in which pressure on the perineum, whilst it arrested the bleeding from the orifice of the urethra, appeared to have directed it backwards into the bladder, yet the filling up of which viscus, although attended with much annoyance to both patient and medical attendant, was not, *in itself*, productive of serious consequences. The proper mode of treatment to be adopted in cases of profuse hemorrhage, when it proceeds from the urethra *anterior* to the triangular ligament, is obviously that by pressure; and if the rules laid down so clearly by the best authorities on the subject, especially those by Mr. Guthrie, be strictly followed, the bleeding point will be soon arrived at, and hemorrhage, either anteriorly, or backwards into the bladder, will be, in most cases, completely arrested. But, on the other hand, in cases of profuse hemorrhage springing from the membranous or prostatic portions of the urethra, *posterior* to the triangular ligament, where pressure can exert but little, if any, beneficial influence, the surgeon should, I think, rely chiefly on the immediate exhibition of gallic acid internally. In it he may place the greatest confidence, its rapid and powerfully styptic action on the urinary organs rendering it peculiarly suitable to such cases. Its timely administration will, in all probability, prevent the distention of the bladder with blood, the necessity for having recourse to instruments for the purpose of withdrawing the contents of the bladder, and the subsequent injection of that viscus with tepid water, with the intention of breaking up

the coagula; which operations must, in all cases, tend more or less to induce a recurrence of the hemorrhage by the additional infliction of mechanical violence or irritation thereby. The gallic acid may be administered, in these cases, in doses of from three to ten grains, but my experience has led me to prefer giving it in three-grain doses every second hour, to giving it in maximum doses at longer periods. The stomach will, in some cases, reject the large doses, when frequently repeated, whereas I have never known it to disagree in three or four grain doses repeated at short intervals, by which means its influence on the urinary organs is steadily maintained. The acid may be ordered either in the form of pill, or suspended in water by means of mucilage.

IRREDUCIBLE EPIPLOCELE.

The following case is an example of irreducible femoral epiplocele, of long standing, which was successfully treated by pressure, confinement to the recumbent position, and the application of iodine.

William Leak, aged 65, a shoemaker by trade, was admitted into Jervis-street Hospital, on the evening of September 25th, 1849, labouring under obstinate constipation, accompanied by vomiting, and pain in the lower part of the abdomen, which was full and tympanitic. The pulse was quick and feeble, and the countenance pale and dejected. The bowels had not been moved for four days. On examination, Mr. Fitzgibbon, the resident pupil, detected a femoral hernia of considerable size, on the left side; it was hard and tense, and somewhat irregular on its surface. After the employment of the taxis for some time, he succeeded in returning part of the hernial tumour into the abdomen, which went up with a loud noise; but a considerable portion of the tumour was left unreduced, having resisted every effort to return it. However, immediately after the partial reduction, the patient experienced considerable relief from his symptoms, his bowels having been twice naturally evacuated, and the vomiting having ceased.

When visiting the wards on the following morning, I found that the patient had passed an easy night, during which he had six copious evacuations. On examining the left groin, the protruded part felt very hard, and was somewhat painful on pressure, especially at its outer margin, which was elastic to the feel, and regular on its surface, whilst the inner portion of the tumour was somewhat irregular, and yielded to the touch a doughy inelastic sensation, such as is afforded by the omentum. There was no distinct impulse communicated to the mass by coughing; the base of the tumour had turned up on Poupart's ligament, to which it was closely approximated.

On minutely examining the hernia, it was manifest that it sprung from the femoral ring; for its neck, which was hard and fixed, could, by flexing and rotating the thigh inwards, be traced escaping from the abdomen; and the man being of a very spare habit, the crescentic margin of the fascia lata could be distinctly felt. External to the hernia were found the cicatrix of an old bubo, and two or three enlarged glands. The case being evidently one of entero-epiplocele, immediate recourse was had to the taxis, by which we were enabled to reduce the external and smaller portion of the tumour, which evidently consisted of intestine, and went up with a slight noise. This portion had been reduced after his admission, but had made a fresh descent before our morning visit, probably whilst the patient was at the night-chair. All our efforts to return the inner and larger portion of the hernia failed; this, from its peculiar feel, irregular surface, and freedom from impulse, obviously consisted of omentum.

The history that the patient gave of the rupture was unsatisfactory; all he could tell us was, that for years he had noticed "a large kernel in his groin," which occasionally pained him, and that he was very liable to attacks of colic, his bowels often being constipated for days.

Feeling that, as long as the patient suffered from this irreducible epiplocele, it would be impossible to succeed in per-

manently keeping up the gut, and that the application of an ordinary truss might, under the circumstances, do him more harm than good, I determined to try the effects of equable compression to the tumour, together with confinement to the recumbent position; and, to carry out this intention, I ordered a truss from Mr. Thompson of Henry-street, which was furnished with a hollow conical pad, of such dimensions as to receive the protruded omentum, and so arranged as to exercise constant equable pressure on the part. This instrument was applied, and the patient was confined to bed in the recumbent position, with his hips elevated; the tumour at the same time was freely painted over each day or every second day, with the strong alcoholic solution of iodine, and hydriodate of potash, and traction of the part was daily employed for the purpose of breaking up adhesions, if possible, and gradually bringing down the hernia from Poupart's ligament. The patient was subjected to this combined treatment for upwards of three weeks, at the expiration of which period I was enabled to return the protruded omentum completely; and, having adjusted a well-formed femoral truss, with a good convex pad over the femoral ring, neither gut nor omentum have since descended.

The proposal of treating a patient with a hernia, apparently irreducible, by confinement to the recumbent position, is as old as, if not older than, Fabricius Hildanus, who gives an account of a man who was radically cured of a rupture of twenty years' standing, by *six* months' confinement to bed, and low diet. Arnaud used abstraction of blood, with low diet and the recumbent position, with the same intention, and successfully. And Mr. Pott states his opinion that many ruptures which were put down as irreducible would have been found capable of reduction had a more judicious and patient method of treatment been adopted; and when this condition is suspected, the treatment should consist of absolute rest in the supine posture for a considerable length of time, great abstinence, and the use of evacuants, so as to lessen the size of the parts in the hernial sac, and render

them capable of passing back again into the abdomen. Some of the older surgeons placed great confidence in the exhibition of the water of caustic potash in cases of hypertrophied epiplocele, being under the impression that it dissolved the adipose tissue so often deposited in old omental herniæ. Sir Astley Cooper has reduced cases of large scrotal hernia, which were supposed to be irreducible, by the application of ice, the good effects of which he imputed to the contraction of the scrotum thus caused by intense cold, keeping up a strong and permanent compression on the tumour; and lastly, Mr. Lawrence deserves much credit for calling the attention of the profession to the advantages of the recumbent position and pressure in the treatment of herniæ supposed to be irreducible.

To practical surgeons the treatment of irreducible herniæ must be at all times one of the greatest interest, for as long as a portion of intestine or omentum remains unreduced, so long must the medical attendant feel an anxiety about his patient; and should the case be one of entero-epiplocele, his anxiety is not altogether relieved by his succeeding in returning the intestine, and leaving a portion of omentum unreduced. For, although an omental hernia, when irreducible, is seldom, when considered abstractedly, attended with bad symptoms, yet it at all times tends to favour the descent of a knuckle of intestine; and further, there is a remote possibility of the protruded omentum itself becoming the subject of inflammatory action, being exposed to all the consequences of external injury and violence.

The following question here suggests itself: are there any cases of irreducible hernia in which an attempt at reduction on the part of the surgeon would be injudicious? There are undoubtedly cases of large herniæ of long standing, in which the protruded parts have attained so great a size, and in which the abdominal parietes have become so adapted to the decrease of their contents, that the reduction of the hernial tumour would be followed by all the symptoms and dangerous consequences

of the introduction of a foreign body into the abdominal cavity. Thus I lately saw a patient with a monstrous congenital hernia, which held such a volume of intestines, that even a partial reduction of the protruded parts was immediately followed by the most distressing symptoms: therefore in each individual case the surgeon must exercise his own judgment.

In Leake's case I made use of the strong spirituous solution of iodine and hydriodate of potash as an application to the tumour, with the intention of stimulating the absorbents to reduce the hypertrophied condition of the omentum, and thereby lessening the bulk of the protruded mass; while, by interposing soft leather between the integuments and hollowed truss, the stimulating effects of the iodine did not prevent the necessary pressure from being upheld. In cases where a powerful stimulation of the absorbents is required, the alcoholic solution of iodine and hydriodate of potash is to be preferred to any other preparation of iodine. I use it in its strongest form, viz., two scruples of iodine, and one drachm of hydriodate of potash, to the ounce of spirits of wine.

I regard this case as an encouraging one; for, although unpromising in the beginning of the treatment, both from its history and symptoms, yet the plan adopted, viz., confinement to the recumbent position, properly applied pressure, and the local use of iodine, was attended with perfect success; and it is an important fact, that his being kept in bed for upwards of three weeks, did not, at his time of life, act injuriously on his constitution.

That many cases of hernia have become irreducible from firm adhesion and increased bulk, every practical surgeon must admit; but I am strongly inclined to agree with Mr. Pott, that many have been put down as irreducible, which would have been found capable of reduction had a more judicious method of treatment been adopted.

Art. XI.—*On the Motions and Sounds of Aneurism, the Mechanism of their Production, and their Diagnostic Value.* By Robert D. Lyons, M.B.T.C.D., L.R.C.S.I., Ex-Clinical Assistant to the Meath Hospital.

Notwithstanding the attention which has been hitherto bestowed on the study of the pathology and diagnosis of aneurism, as it affects both the primary arterial trunk and its subdivisions, much yet remains to be done before the investigation of this important disease can be considered in any way complete; for, undoubtedly, great obscurity still invests many interesting questions connected with its relations to other lesions, its position with regard to the "law of morbid association," and its discrimination from the other forms of disease which in common with it possess the character of presenting tumour.

The general question of the diagnosis of aneurism from cancerous and other forms of disease capable of being confounded with it, has received considerable elucidation from the labours of practical observers; and many rational principles have been established, of the highest moment in aiding us to ascertain the precise nature of tumours in the course of the great vessels. But no little confusion and uncertainty still exist as to the precise method or order to be followed in studying or recording the several symptoms presented in particular cases, while one important class of phenomena has, with few exceptions, been very negligently investigated, and their import misinterpreted, at the same time that untenable theories have been advanced to explain their causation.

Omitting in the present inquiry the consideration of those signs which tumours possess in common with several affections of the cavities in which they may exist, such as palpitation, dyspnœa, cough, hemoptysis, &c., I shall proceed to study those which more immediately belong to the science of auscultation.

Considered in the most general point of view, the phenomena observable in aneurismal or other tumours would seem to be readily divisible into two great classes, viz.:

1st, *Extrinsic*, or those which result from the relation of the tumour to surrounding parts; and

2nd, *Intrinsic*, or those originating within the tumour, and developed by its own proper actions.

Each of these classes presents at once several subdivisions; and we shall see that in their combinations and modifications are to be found the elements of all scientific diagnosis of the disease; and it remains yet to be shown, whether, in the absence of all the phenomena of the second great class, or those which I have denominated *intrinsic*, as may occur in formations within the cranium, it is at all possible to arrive at positive and just conclusions.

The modifications of the particular phenomena presented by tumours are much influenced by the site occupied by them, and deserve to be investigated in a special manner, according as they are situated in the three cavities of the head, the thorax, and the abdomen, or in the neck and the extremities; and we shall find that the number of diagnostic elements to be looked for in any particular case bears a very constant relation to the situation in which the disease is developed. Thus we know that in the thorax the phenomena reach their maximum of complication, that the abdomen presents us with the next greatest number and variety, and then the neck and extremities, where the fewest are to be sought for; while in the cavity of the cranium it is quite possible that the *intrinsic* may be altogether absent. With regard, however, to tumours within the cranium, developing, as they often do, phenomena connected with abnormal manifestations of nervous energy, it appears to me preferable to study them by a separate method of investigation.

Intra-thoracic tumours, as well as those which occupy the cavity of the abdomen, present us with a phenomenon not avail-

able for purposes of diagnosis in those which occupy the course of the great vessels in the head, neck, or extremities, and dependent on the presence of air in these cavities. Hence in the general expression of the diagnostic elements to be considered in aneurismal or other tumours, we find that the *extrinsic* phenomena are capable of being divided into two sub-classes.

1st. Those resulting from eccentric(*a*) pressure.

2nd. Those from interference with sonoriety.

The phenomena of the first subdivision, or those resulting from eccentric pressure, are deserving of the very highest consideration, especially in the study of tumours occupying the cavities of the thorax and abdomen; and they may be regarded, perhaps, as those which are calculated to give the very earliest indications of deeply seated disease, though it does not appear that their combination in any possible way, or even their association in a marked manner with the second class, or with the phenomena from interference with sonoriety, can ever be expected to do more than announce the existence of tumour generally. Some assistance, it is true, may be derived from considerations connected with the doctrine of probabilities, as based on statistical observations; for by far the greater number of intra-thoracic tumours on record are undoubtedly aneurismal(*b*). But for the

(*a*) This very appropriate term was first applied by Dr. Stokes.

(*b*) The value of this method of approximating to a diagnosis from statistical considerations and the doctrine of probabilities, is usually very much over-estimated. For, although the frequency of occurrence of any one particular lesion may be infinitely greater than that of any other special lesion, yet comparing the occurrence of the first lesion with those of *all* the lesions which are capable of simulating it, the probabilities of diagnosis must be estimated from the ratio which the frequency of the occurrence of the first bears to the *sum* of all the other lesions, and not from its relation to the frequency of occurrence of one other special lesion. Thus it is usual to compare the number of cases of aneurism with the number of cases of cancer, instead of comparing it with the *sum* of the number of cases of cancer, of enlarged glands, of hydro-pericardium, of dilatation of the pulmonary artery, &c., taken together. Hence the little value of such general *a priori* conclusions.

establishment of a direct and positive diagnosis we must closely investigate the intrinsic phenomena presented in any particular case, from which, as we shall see, the most important conclusions may be drawn. And to the study of these, especially as developed in aneurismal tumours of the great cavities and of the extremities, I propose to devote the principal portion of this essay.

The motor and auscultatory phenomena presented by aneurism of the aorta, or of its subdivisions, are subject to endless variations of character and intensity, and much confusion exists generally as to the exact import and value of any or all of them; so much so, indeed, that the observations of Dr. Stokes on this point are almost as applicable to the generality of auscultators in the present day as when first written.

"There is," says this author, "a great deal of misconception abroad with respect to the occurrence of *bruit de soufflet*, or other murmurs, as a sign of aneurisms; the truth is, that these phenomena are frequently altogether absent, and we are in great want of facts to explain their absence or presence in particular cases. I have observed their absence in aneurisms of all parts of the aorta"(*a*).

Notwithstanding the variety and modifications of the *intrinsic* phenomena of aneurisms, we find that they are all readily reducible to two sub-classes.

1st. Those which depend on the motor properties of the tumour.

2nd. Those which are developed by its auscultatory principles(*b*).

It will be found that in studying the phenomena in this order they are very much simplified, and we shall consider them successively in relation to tumours of the thorax, of the abdomen, and lastly of the neck and extremities.

(*a*) Dublin Journal of Medical Science, First Series, vol. v. p. 417.

(*b*) The observations in this paper have reference solely to tumours on the line of the great vessels.

The motor phenomena constituting the impulses of aneurisms, are in many instances appreciable by two of our senses, sight and touch, and from these alone many important conclusions can be drawn, which are of great value in discriminating between tumours communicating with the larger vessels and those which are only in contact with them. In by far the greater number of cases of thoracic aneurism hitherto recorded, the shock conveyed to the hand placed over the tumour has been distinctly double, while in aneurisms of the abdominal aorta and those of the extremities, a single impulse only has been observed. This constitutes a most important difference, the explanation of which will require a close investigation of the physical laws which regulate the circulation. Though the double impulse is not of necessity always to be looked for in thoracic aneurisms, its presence is sufficiently constant to warrant us in stating generally, that this variety is characterized by a double impulse. The acoustic phenomena observable in aneurisms consist of sounds presenting all varieties of intensity, and exemplifying all the modifications which have been hitherto observed in connexion with the circulation. The sounds of thoracic aneurisms, like the impulse, have, in the vast majority of cases, been double; while, with a few exceptions, those observed in the abdominal aorta or its branches, and in the arteries of the extremities, have been single.

The following cases have been selected as illustrative of the positions here maintained, and are detailed briefly, and with especial reference to the question of the impulses and sounds.

Case I.—John Casey, aged 51, a rectifying distiller, was admitted into the Meath Hospital on the 6th of November, 1847. He stated that he had indulged a good deal in the use of ardent spirits, but had generally enjoyed pretty good health; about April of this year he began to suffer from pain in the left side and back of the head, extending down the neck, through the

shoulder and scapula, and thence into the arm; he had occasional and severe attacks of palpitation of the heart, particularly at night, and became unable to repose on the right side; he shortly after began to be sensible of a pulsation within the thorax. Having got a severe wetting in August all his symptoms became much aggravated, and within three days he experienced some difficulty in swallowing, and a partial loss of voice, while the dyspnœa and sense of oppression about the chest, from which he had previously suffered, became much increased.

On admission he presented a rather pale countenance, not indicative of much suffering, his principal complaints being of the pain in the left side of his head and shoulders; his voice was rather remarkable, higher in pitch than natural, and husky; the pulse of the left wrist could be felt with very great difficulty; and, as was discovered long subsequently during a very careful examination made by Dr. Stokes, the left carotid was completely obliterated; some doubt as to the cause of this obliteration existed in consequence of a cicatrix lying over the course of the vessel, but which he said was due to an opening made by himself several years before, to give exit to a small quantity of matter.

The respiratory murmur was generally feeble, while percussion gave a dull sound over a surface about four inches square, occupying the superior third of the sternum and the cartilages of the first three ribs of the left side, which part was considerably more convex than the rest of the chest. A visible throbbing movement in this situation at once arrested attention; there was also a distinct pulsation above the right clavicle. On applying the hand to the front of the sternum, a distinctly double diastolic impulse was felt, giving a very considerable shock; this surface was rather tender, and continued pressure on it caused extreme faintness, pain, and general perspiration. On applying the stethoscope, a double sound, accompanied by a gentle souffle was heard; the first sound was dull and pro-

longed, the second shorter and more abrupt. The heart's action was normal, and was ascertained to precede that of the tumour by a short interval.

The patient was under observation on several occasions at intervals of two or three months. He appeared to receive considerable benefit from the treatment adopted, which consisted of moderately generous diet, with a small allowance of wine or porter, and occasional leeching of the tumour.

The Case Report for the 11th of May, 1848, contains the following observations made by Dr. Stokes, during a clinical visit:

"The action of the heart was normal, no second impulse was found to exist, both sounds natural; there was much difference in the phenomena of the aneurism in the upright and in the recumbent positions: in both the double sound and double impulse were perceptible, but they are, particularly the latter, much stronger and more evident in the upright position; the second sound was louder in the aneurism than in the heart; the souffle had at this time disappeared."

After being under observation at different periods for more than two years, this patient, who was rather of a roving disposition, was finally lost sight of.

The next case presents some additional features, and is an example of aneurism leading to a fatal result, without rupture of the sac at any time.

Case II.—Robert Owenson, aged 50, became a patient in the Meath Hospital, under the care of Dr. Lees, during the summer of 1848. He had been in the army from early life, but, though exposed to much hardship, he had never received any bodily injury. He had been a member of the regimental band, and had played the serpent and trombone. His health had always been excellent until within the last twelve months, when he had suffered from a severe attack of bronchitis, accompanied by swelling of the legs and abdomen, which continued about a month, and finally disappeared. Shortly after a tumour of

inconsiderable size presented to the right of the sternum, corresponding to the cartilages of the third and fourth ribs; it was accompanied by some pain in the chest, and dyspnœa, but no dysphagia. In July, 1848, he was attacked with difficulty of breathing and dysphagia, while the tone of his voice became much altered, and he experienced great difficulty in maintaining a conversation. He also suffered from pain in the left side of the head and shoulders. About this time a second tumour presented to the left side of the sternum, opposite the first, unaccompanied by pain, but pulsatory. The epigastric veins became swollen from their origin as high as the sternum. From this period all the phenomena increased in intensity, the dysphagia and dyspnœa causing him great distress, sleepless nights, &c. He became unable to use solid food, and even liquids were swallowed with great difficulty. He suffered for a short period from slight pain in the spine, but was never subject to the constant or violent boring pain so often attendant on aneurism.

On admission he presented a very peculiar expression of countenance, indicative of much suffering. The face was full and congested, though not at all œdematous. He was almost constantly obliged to maintain the sitting posture while in bed. The intonation of his voice was very remarkable, and there was considerable stridor from below. The voice was that of one speaking with difficulty, and as if the words were formed altogether during inspiration. The hands were of a dark congested colour, and, as well as the feet, considerably below the natural standard of heat. The neck had assumed the peculiar "tippet-like" form, and the hollows behind the clavicle were converted into prominent convexities.

No inequality of pulse was observed, and the chest was universally resonant, except where the tumour presented. There was likewise no inequality of respiration. A well-marked prominence occupied the middle third of the sternum and cartilages of the second and third ribs on both sides. This tumour was not uniform, being somewhat less prominent in the centre

than at either side, and was of a dark brown appearance, covered with small veins; the front of the chest generally was œdematous.

From the time of his admission into hospital, his principal sufferings were caused by recurring attacks of aggravated dyspnœa, during which his respiration was extremely laborious, the stridor becoming more intense, the face congested and livid, and the eyes starting forward. He was often obliged to pass whole nights in the sitting posture, and towards the close of life the fits of dyspnœa became more frequent, attacking him during the day as well as the night.

The radial pulse was not affected on either side; the respiratory sounds, though feeble, were uniform; and the chest was universally resonant, except over the tumour. The hand, placed over the aneurism, felt a distinct, heaving, diastolic throb, not synchronous with the heart; and two sounds were detected by the stethoscope(*a*).

In this case death took place without rupture of the sac or hemorrhage of any kind, apparently from a protracted and aggravated attack of dyspnœa.

On *post mortem* examination a very large false aneurism, globular in figure, and about four inches in diameter, was found springing from that part of the ascending portion of the arch where it joins the transverse. It had contracted most intimate adhesions to the sternum, which was in part eroded; the trachea was compressed, the line of its direction being a little altered, so as to be convex towards the right side, but its caliber was not very much diminished. The sac was almost completely filled with concentric laminæ of fibrine, and communicated with the cavity of the aorta by a free opening about an inch and a half in diameter. The edge of this opening

(*a*) In the absence of accurate notes of the phenomena of sound and motion in this case, I cannot venture to speak with confidence of their characters; but the impression remaining on my mind is, that the impulse was double, and that the sounds were not of the nature of *bruit de soufflet*.

presented an irregular line, but its surface was smooth. The aorta below this point, down to the semilunar valves, appeared quite healthy. The valves themselves were perfectly transparent, free from deposit, and quite competent to perform their office. It is to be regretted that the condition of the recurrent and other nerves in the vicinity of the tumour was not carefully examined. The paroxysms of dyspnœa were extremely frequent and distressing for a short period before death, and in the absence of hemorrhage, or other lesion, the fatal result appears to have been caused by a prolongation of one of these fits beyond a certain point: it being well known that the suspension of respiration for a brief period is incompatible with the continuance of life. Should a similar case occur again, might the question of tracheotomy be entertained? It is manifestly the surgeon's duty to prolong existence under any circumstances, though, with an aneurism, in the condition of that under consideration, the patient's chances of living are at a minimum.

The next case is also an example of thoracic aneurism with double sound and impulse.

Case III.—Samuel Wilson, aged 35, a butcher, was examined by me, for the first time, on the 6th October, 1849. He is a low, stout man, with florid complexion. He first began to suffer from aching pain in the chest about six months previously; this gradually increased in intensity, extended through the head, shoulders, and arms, and, with a little dysphagia, has been his only cause of complaint. On proceeding to examine the radial pulses, it was found that a large cicatrix, from a burn, occupied the anterior surface of the left carpus and inferior part of the fore-arm, so that the radial artery was obliterated in this situation. The respiratory sounds were equal on both sides, and there was an absence of stridor. The heart's impulse and sounds were perfectly normal. A flat and not very prominent tumour occupied the middle of the sternum, the surface of which presented some venous discoloration. It

was observed to pulsate visibly, and on applying the hand two impulses were felt, the second being very feeble. The stethoscope detected two sounds, neither of which was accompanied by murmur; they were both of rather a dull character.

March 18th, 1850. I have had an opportunity of examining this case to-day after a very considerable interval of time. His general health has much improved, and his sufferings from pain are much less than formerly, though he has continued without intermission at a most laborious occupation, that of journeyman butcher, and has lived very freely. The tumour is somewhat less prominent, and the signs less marked than when he was under observation before. The dysphagia has completely disappeared, and he is very seldom troubled with any dyspnœa, passing most tranquil nights.

The right radial pulse is full, strong, and beats visibly, though there is very little visible action of the vessels of the neck. The respiratory sounds are uniform, the heart's action is normal, and two distinct centres of pulsation can be observed in the thorax. The hand, placed over the upper third of the sternum, receives a distinct diastolic throb of considerable force, which forms the first impulse, and is readily perceptible; but, with very careful and patient examination, a second, shorter and feebler, can be detected. Two sounds, dull in tone, but strong, are heard by the stethoscope, their point of greatest intensity being the left half of the superior third of the sternum.

The patient was now placed in the recumbent posture, the head on a level with the trunk, and the motions and sounds carefully examined; *they were both fully as well developed in this position as in the upright, and both continued double.*

These cases present a combination of phenomena, which, in the main, agree with the results arrived at by other observers. Of the extrinsic signs, the first subdivision, or those developed by eccentric pressure, have not been manifested in a very marked manner; while, from the second, we have had

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unmistakeable evidence of interference with sonoriety, and of the existence of tumour. The cases recorded by Stokes, Greene, Bellingham, and others, fully establish that in the majority of instances intra-thoracic aneurisms have been accompanied by double sound and double impulse; while, on the other hand, with a very few exceptions, those of the abdominal aorta and its branches have presented single impulse and single sound. The following cases illustrate remarkably some of the principal signs and symptoms attendant on aneurisms of the abdominal cavity.

Case IV.—J. Branagan, aged 30, by trade a baker, was admitted into the Meath Hospital, under the care of Dr. Lees, August 5th, 1848. He was a man of spare habit, generally temperate, and of healthy constitution; for nine months previously to admission he had been subject to constant grinding pain in the back, extending into either hip, and around the margin of the false ribs on the left side to the left hypochondrium; he had also suffered for some time from dysphagia, referred to a point opposite the lower end of the sternum, and from uneasy sensations in the stomach, particularly after meals, but never attended with vomiting; the bowels were generally constipated; and he had been for some time sensible of a pulsation in the epigastric and left hypochondriac regions. For a week before admission he had uneasy sensations in the left side of his chest, scarcely amounting to pain, but accompanied by some dyspnœa.

On percussion the left side of the chest posteriorly, from the scapula downwards, was found quite dull, with absence of respiratory murmur; in the opposite lung the vesicular murmur was rather loud; the heart's action was very rapid but normal.

A visible pulsation in the epigastric and left hypochondriac regions at once arrested attention. A tumour of considerable size could be felt in this situation, which gave to the hand placed over it a distinct single diastolic pulsation of great

power; and a loud single *bruit de rape* was audible by the stethoscope, while he was in the recumbent position. On making him stand up the murmur became inaudible, and the pulsation was much diminished in force.

He continued in this position until the morning of the 8th of August, when he was suddenly attacked with syncope; as soon as a little reaction took place, he presented all the appearance of a person dying from hemorrhage, the countenance blanched, and the surface cold and perspiring. The left side of the chest had become universally dull on percussion, as well in front as behind; and I ventured to offer an opinion that rupture of the aneurismal sac had taken place, and that he was dying from hemorrhage into the pleural cavity. He survived only a few hours.

On opening the thorax the left lung was found compressed to a very small size, the cavity of the pleura being occupied by a vast quantity of blood, which had completely separated into serum and crassamentum; the convex surface of the left half of the diaphragm presented two perforations, one situated close to the spine, recent, patulous, half an inch in diameter, the other more anterior, apparently of older date, and blocked up by a coagulum. An aneurism, about the size of a small orange, was found in the abdominal aorta, under the crura of the diaphragm, which were much expanded over it. This tumour occupied the twelfth dorsal and first lumbar vertebræ, which were much eroded. The aneurismal sac appeared, at no remote period, to have become diffused into a limited space around the vertebræ, on their front and sides, forming a circumscribed false aneurism external to the original sac, and communicating with the apertures in the diaphragm.

In this case it would appear, then, that there were at least three periods at which hemorrhage from the sac had taken place: first, when, the sac having given way, blood became effused on the front of the vertebræ, and was circumscribed by the crura of the diaphragm. Secondly, when, about a week previously to

admission, he began to suffer from pain in the chest; at this period we may conclude that the diaphragm had given way for the first time, by the more anterior of the two openings above described, effusion of blood having then taken place into the cavity of the pleura, causing the dulness posteriorly from the scapula downwards, which was noticed on his admission; in this instance a coagulum appears to have formed in the opening, and the loss of blood was thus checked. And thirdly, when the diaphragm had again given way by the second and most posterior orifice, and death had resulted from the copious hemorrhage into the same side of the thorax, causing, as was noticed, universal dulness. In this case the impulse and sound of the tumour were observed with great care, and no doubt could be entertained that they were each single; they also underwent remarkable modification in the upright position, a fact first pointed out, I believe, by Dr. Corrigan. The next case presented many features of similarity.

Case V.—L. Purcell, a groom, was admitted into the Meath Hospital, under the care of Dr. Stokes, during the summer of 1848. He suffered from pain in the back, but it was not so severe, or of the same grinding character, as in Branagan; it also extended round to the hypochondrium. He complained of uneasiness after meals, but had no vomiting: the bowels were generally constipated. The tumour occupied the epigastrium and left hypochondrium, presented a single strong diastolic impulse, and a single *bruit*, which was rather harsh. The hydrostatic test was tried in this case also, and with the same result, namely, diminution of the force of the tumour and disappearance of the *bruit*. He could not be induced to stay in hospital, and, having resumed his occupation, died very suddenly. No *post mortem* examination could be obtained.

Dr. Neligan has kindly furnished me with notes of the observations which he had made on this case in December, 1847, when Purcell was for some time a patient in Jervis-street Hospital, from which it appears that the commencement of his

symptoms dated at least eighteen months previously, when he first began to suffer from pain in the back and hip; but until about three weeks before his admission into Jervis-street Hospital he had never become sensible of pulsation in the epigastrium. With regard to the phenomena of motion and sound, I am very happy to have my own observations confirmed by those of Drs. Stokes, Lees, and Neligan, as I find that M. Gendrin, the distinguished physician of La Pitie, has expressed a most decided opinion as to the nature of these phenomena in aneurism of the abdominal vessels. In the Revue Médicale, for December, 1844, he observes:

"Les battements anomaux des anéurysmes profonds qu' on percoit à la main sur les parois des cavités splanchniques sont doubles;" and again:

"Ce second bruit de choc ne manque jamais dans les anéurysmes des grosses artères, il est même joint à une impulsion évidente, il est peu prononcé dans les anéurysmes des artères moyennes, il est nul dans ceux des vaisseaux du troisième ordre."

These statements are quite at variance with the facts noted by the majority of observers in Ireland; it is true that in rare instances a second sound has been heard in abdominal aneurisms, but I know of no recorded case in the Irish or English periodicals in which a double impulse attended the abdominal form of the disease. My own experience of the disease, as it presents itself in the cavity of the abdomen, is limited to the two cases above recorded; and though they would hardly warrant a general conclusion as to the precise nature of the *intrinsic* phenomena attendant on this form in the majority of recorded cases of abdominal aneurism, a single diastolic impulse, and a single sound, presenting, however, in different cases, every variety of character and intensity have been observed(*a*). Some undoubted exceptions to this general rule

(*a*) These statements are amply corroborated by reference to the works of Hope, Copland, Crisp, and others.

have occurred. Dr. Stokes informs me that, in at least two cases, he has observed a double sound accompanying this variety of aneurism; and in his work on Aconite, Dr. A. Fleming details the particulars of a case in which double sound and single pulsation were manifested. I transcribe his account of this observation, as it appears to have been made with great accuracy and attention.

"J. W., æt. 40, was admitted into the Royal Infirmary, Edinburgh, under Dr. Paterson, July 5th, 1843, with an aneurismal swelling (of two years standing) of the abdominal aorta, situated immediately below and to the left of the xiphoid cartilage. It pulsates strongly, and a purring, tremulous sensation is communicated to the hand; two murmurs are heard, the first, which is the louder of the two, corresponding to the dilatation of the sac; the second, to its subsidence. Posteriorly, on the left of the spine, a pulsating swelling is observed, and two sounds are audible, corresponding to the pulsations of the heart. The first of these is accompanied by a slight *bruit.* When lying in bed he feels the tumour in the back pulsating with great force. He suffered from constant and severe lancinating pains in the left side of the abdomen, and extending downwards to the left groin, and around the hip-joint; heart pulsates strongly; sounds normal; pulse 84, full and firm." The tincture of aconite was administered for upwards of a month, and with great relief to the neuralgic pains.

"The force of the pulsations in the tumour was at the same time remarkably diminished; the abnormal murmurs acquired a soft, blowing character, and the second of them was frequently entirely absent. The patient could not feel the pulsation in the back, and the *bruit,* which accompanied the first sound in that situation, was, for the most part, inaudible. Death ensued on the 18th of August, from rupture of the sac, and escape of blood into the sub-peritoneal cellular tissue"(*a*).

(*a*) An Inquiry into the Physiological and Medicinal Properties of the

Of the cases of aneurism of the branches of the abdominal aorta on record, the only one that I am acquainted with, in which a close stethoscopic investigation of the motions and sounds was made, is that laid before the Pathological Society by Dr. O'Ferrall, at the meeting of March 16, 1850. The case was one of aneurism of the superior mesenteric artery, presenting a manifest moveable tumour, with single diastolic impulse, purring tremor, and a single *bruit*. The *frémissement* appeared to reside as well in the tumour itself as in a small vessel which crossed it, and which was detected during life. The aortic and mitral orifices were both diseased in this instance. By the kindness of Dr. O'Ferrall I have been favoured with an examination of the recent parts. The aneurism was about the size of a small egg, and contained coagula; and a small vessel ran in front of it.

I have long and anxiously sought for an example of aneurism of the vessels of the neck, for the purpose of instituting a careful and minute investigation of their motor and auscultatory phenomena, which in most of the cases on record have been examined in a very cursory and unsatisfactory manner, though I cannot but think that they are deserving of the very highest consideration, as upon them alone must our diagnosis be founded; and, indeed, with the examples of error in diagnosis, and consequently in practice, which have occurred with some of the most distinguished surgeons, in reference to tumours on the line of the vessels in the neck and extremities, no details can be considered too minute in the examination of the motions and sounds presented in particular cases. Hitherto I have been unsuccessful in my search for cases of tumours in the course of the carotid or subclavian artery. By the kindness of Mr. S. G. Wilmot, Surgeon to Steevens' Hospital, I am enabled to make a few observations on a diseased condition of the femoral artery.

Aconitum Napellus, by Alexander Fleming, M. D. London, 1845. The author is now Professor of Materia Medica in the Queen's College, Cork.

Case VI.—John Dunne, aged 26, was admitted into Steevens' Hospital on the 2nd March, 1850, under the care of Mr. Wilmot.

About seven years since, during an instinctive effort to grasp a falling knife between his thighs, the femoral artery was opened in the middle third of the left thigh, which accident was followed by considerable hemorrhage, and after a few days by the formation of a pulsating tumour.

The artery was tied in Scarpa's space shortly afterwards by the late Mr. Wilmot, without, however, much effect on the tumour, which soon regained its former size; but as the patient experienced no suffering whatever, he was indifferent about it, and continued up to the present time without medical aid.

March 4th. I examined the case on this day, in company with Messrs. Wilmot and Fleming. There was an oval flattened tumour in the middle third of the left thigh, apparently crossed on its inner aspect by the sartorius muscle, and presenting about its centre the cicatrix of the original wound. It was quite free from pain, and he at no time suffered inconvenience from it. To the hand a powerful single diastolic impulse was communicated, accompanied by a remarkably intense *frémissement*, which, though present when the limb was laid flat on the bed, or when supported by the hand, yet disappeared when the adductor muscles were thrown forcibly into action. The impulse was distinctly single, and was unaffected by elevating the foot so as to allow the column of blood below the sac to be under the influence of gravity. On applying the stethoscope, a most intensely loud sound was heard, which, on careful auscultation, appeared capable of being analysed, and separated into two, one of which was perfectly continuous, uniformly of a humming character, the other synchronous with the arterial beat, and of a loud whirring character. The combination of these two formed a most remarkable sound, which could not be more aptly compared to anything than to the noise of a winnowing machine. It was apparently unaffected by the absence

or presence of the *frémissement*, and was audible when the ear was several inches distant from the end of the stethoscope. The popliteal artery beat fully as strong on this side as on the opposite, and there was an absence of venous discoloration or œdema. The pulsation and sounds were arrested by firm pressure over the femoral artery under Poupart's ligament.

Many general considerations make it highly probable that in this case a communication exists between the vein and artery, and the stethoscopic signs give corroboration to this view. Under no circumstances have I witnessed an example of continuous murmur in an artery, or in any of the ordinary forms of aneurism(*a*). I am therefore disposed to consider it as produced in the vein, while the shorter and rythmic sound is developed in the artery. This, therefore, cannot be taken as an example of external aneurism accompanied by two sounds, which, though possible, I think must be a very rare occurrence, requiring special conditions for its production; I have not myself detected the double sound in aneurism of the lower extremity, but Mr. Wilmot informs me that in a case of popliteal aneurism, some years since under the care of Mr. Cusack, in Steevens' Hospital, and of which he took accurate notes, a double sound was observed in the sac. The morbid specimen which is preserved in the hospital museum is an example of true aneurism or dilatation of all the coats. The tumour is about the size of a small apple, communicates with the artery by a rounded free aperture, and when recent contained only a small quantity of coagulated blood, without any concentric laminæ of fibrine.

From a consideration of the phenomena presented in the foregoing cases, taken in conjunction with those which have

(*a*) An excellent memoir has emanated from the pen of Dr. Bellingham, on the subject of "Venous Murmur," or the *bruit de diable* of the neck, in which, I think, he has completely established that the continuous sound generally heard is referrible to the veins, and the intermittent one to the arteries. Medical Press, February 23rd, 1848.

been already recorded by other observers, I think we are warranted in deducing the following generalizations:

1st. That the phenomena, presented by aneurismal tumours, and which become available as elements of diagnosis, are divisible into Extrinsic, or those dependent on the relations of the tumours to surrounding organs, and which are the results either of *eccentric pressure* or of *interference with sonoriety;* and Intrinsic, or those which depend on the actions proper to the tumour itself, being developed either by its *motor*, or by its *acoustic properties.*

2nd. That any possible combinations of the extrinsic signs are of themselves only sufficient to establish the existence generally of a tumour, but cannot be considered as adequate to decide its nature.

3rd. That consequently the study of the intrinsic phenomena, comprising both the impulses and sounds of aneurism, becomes of the highest importance, being equally valuable in regard to both internal and external aneurisms.

4th. That the impulses and sounds of aneurisms *follow* those of the heart, at an interval of time proportionate to the distance of the seat of disease from the centre of the circulation; and that they are not only not synchronous with, but often extremely different in character from those of the heart.

5th. That the results arrived at by several observers warrant us in concluding that, as a general rule, intra-thoracic aneurisms are accompanied by two distinct impulses and two distinct sounds.

6th. That almost invariably aneurisms of the abdominal aorta, or of its branches, and those which are situated on the vessels of the extremities, are attended with only a single impulse and a single sound(*a*).

7th. That there is a point to be yet determined, situated at

(*a*) With regard to the vessels of the neck and upper extremities, we are much in want of accurate observations on the precise nature of the intrinsic phenomena which their aneurisms generally present.

a certain distance from the centre of the circulation, on the cardiac side of which two impulses and two sounds may in general be expected to attend aneurisms, and on the distal side of which these tumours are generally characterized by a single impulse and a single sound; and that on the aortic trunk, the precise point at which the second impulse and second sound are lost is yet to be ascertained.

I shall next make a few remarks on the general characters of these motions and sounds, which present a good deal of similarity in the different forms, but yet, to the practised hand and ear, convey many indications that will be found valuable in estimating the precise conditions of the sac; and which, it may be affirmed, are sufficient to lead us not only to the ready diagnosis of aneurismal from all other tumours, but even to distinguish the true from the false aneurism, a question of the greatest moment in estimating the probable duration of life, as first suggested to me by Dr. Stokes.

The hand, placed over an aneurism, receives an expansive heaving impulse of considerable power, which is uniform at all points of the tumour, and may be readily ascertained to *follow* that of the heart. This is succeeded by the movement of retraction, first pointed out by Gendrin, during which the tumour gradually recedes from the surface, until, if situated in the thorax, it is again impelled against the hand with a shorter and more feeble shock, followed by a very brief interval of repose, during which the tumour is at its minimum of size, when a series of similar actions recommences. These impulses may be accompanied by the purring tremor or *frémissement cataire*, but this is by no means a necessary or even usual attendant on aneurisms; though, when developed *in* a tumour, and not present in the heart, it is a valuable indication that we have to deal with what is most probably an aneurism. A careful examination should in all cases be made as to its points of greatest intensity, and the direction in which it is propagated. In Dr.

O'Ferrall's case of mesenteric aneurism this sign was present, but seemed to occupy two distinct situations, having been at one time localized exactly to the line of the small vessel which crossed the tumour, and which was felt during life; at other times being perceptible in all parts of the aneurism. Now, of course, any tumour, for example, an enlarged mesenteric gland, carrying before it a branch of the superior mesenteric artery, would be as capable of producing the phenomenon as an aneurism.

On applying the stethoscope over an aneurism, the impulse or impulses are felt, and their force is often manifested in a very marked manner, by communicating visible and rhythmic movements to the head of the observer. A sound, moreover, is heard, which generally does not partake of the nature of *bruit de soufflet*, but may be described as the *bruit de choc*, a term aptly enough applied by Gendrin, to designate that undefinable sensation conveyed to the ear when one is uncertain whether it be a distinct sound or the result of the impulse which we mistake for sound. In cases of intra-thoracic aneurism, as I have before observed, the sounds are generally two, the first longer, fuller, and more readily audible than the second, which is generally abrupt. These sounds are capable of undergoing all possible modifications, and may be rasping, sawing, or blowing, perfectly independent of the character of the heart's sounds, as well shown by Dr. Bellingham's valuable observations on his sixth case, in which two sawing murmurs were heard in the aneurism, the heart's sounds being perfectly natural. The first aneurismal sound is very different in character from the first sound of the heart, which is also true of the second sound; and repeated observation has shown satisfactorily that both may diminish in intensity, or even become quite lost, between the sac and the heart. Accurate observations are yet wanted of the intrinsic phenomena presented by cancerous or other tumours of the mediastinum, but I think it is highly im-

probable that they could give origin to impulses and sounds corresponding in character and intensity with those here described.

M. Gendrin was the first, I believe, who directed attention to the fact that the true aneurism, or that by dilatation of all the coats, presents, in both its signs and symptoms, certain points of difference from the false aneurism, or that by rupture of the internal and middle coats. The true aneurism, even when intra-thoracic, he considers to be always accompanied by only one impulse and one sound, while the sufferings of the patient are, according to this author, confined in this form of the disease to a sensation of fulness and uneasiness under the sternum. In reference to the latter observation, I may state, that Dr. Stokes has been long in the habit of expressing a similar opinion in his clinical lectures. As to the phenomena of the impulses and sounds, I think they are more influenced by certain mechanical conditions of the sac than by the fact of the aneurism being true or false.

Since the time when the introduction of auscultation by Laennec revealed the existence of sounds in aneurisms, several theories have been brought forward to explain their causation. The impulses, though equally important phenomena, have been more neglected, indeed, the two have been often confounded, as the following statement of Hope fully proves: "The second sound of the heart is generally inaudible on the abdomen, and consequently the pulsation is simple;" yet he elsewhere speaks of pulsation and sound as different(*a*).

Dr. Stokes long since called attention to the existence of a second sound in thoracic aneurisms, but M. Gendrin was, I believe, the first who published an account of the second impulse, and propounded a theory for the explanation of both sounds and impulses(*b*). This theory Dr. Bellingham has endeavoured to refute in some observations appended to a series of

(*a*) Hope on the Heart, fourth edition, pp. 433, 416.
(*b*) *Revue Médicale*, December 1844.

ably recorded and most valuable cases which came under his own observation, and on which he very unsuccessfully attempts to found a new theory. As will be seen, his cases fully corroborate my observations as to the existence of double sound and impulse in thoracic, and single sound and impulse in abdominal aneurisms. The views of M. Gendrin and Dr. Bellingham, with regard to the production of the first sound, are very nearly identical. The latter says: "The sudden distention of the sac, which immediately succeeds the ventricular systole, of course gives rise to the impulse, and the friction of the blood against the parietes of the orifice of the sac, during this act, generates sound, and this constitutes the normal first sound of aneurism;" and further on, after an attempt to overthrow M. Gendrin's theory of the second impulse and sound, he proceeds to say: "If we consider the state of the sac of an aneurism when the ventricular systole ceases, it must be obviously then unfilled, at least it must contain less blood than during the systole. If the sac springs from the arch of the aorta, and this part of the vessel has become inelastic from previous disease, and the orifice of communication between the sac and the artery (which is a permanently open one) is of large size, we can easily understand that regurgitation of blood from the large arteries, which arise from the arch of the aorta, must take place into the sac at each diastole of the ventricle to occupy the vacant space; equally as when the aortic valves imperfectly close the orifice, regurgitation occurs into the left ventricle at each diastole. The mechanism by which the second impulse is produced is quite analogous to that which gives rise to the second sound." Again: "In aneurism of the abdominal aorta we have neither a double sound nor a double impulse, because a sufficient amount of blood does not regurgitate into the sac to generate a second sound, or to communicate a second impulse(*a*)."

This theory of regurgitation to explain the second impulse

(*a*) Dublin Medical Press, vol. xix. pp. 260, 340, 355, 371, 405.

and sound, I conceive to be utterly untenable; indeed in Dr. Bellingham's own cases we find evidence against it, for in only one case, viz., that of Butler, No. VI., has the phenomenon of visible radial, or carotid pulsation been noticed, while in two instances (Cases X. and XII.) the aneurism existed on the descending portion of the arch of the aorta, presenting posteriorly between the scapula and the spine, and yet was accompanied by double sound. Further, the experiments performed by me on my third and sixth Cases, show that on the one hand the recumbent posture and consequent obstacle to regurgitation had no influence on the second sound and impulse of thoracic aneurism; and on the other, that elevation of the lower limb, so as to favour regurgitation into the sac of a femoral aneurism by the force of gravity, was incompetent to produce the second impulse or second sound in this situation.

I shall now, in conclusion, proceed to present my own views on the mechanical conditions of an aneurismal tumour, required for the production of independent impulse and sound.

The force communicated by the heart to the column of blood in an artery, being propagated equally in all directions, becomes the principal agent in the production of aneurism, whether of the true or false variety, whenever deposit of atheroma, or any other morbid change, induces a weakened condition of the arterial parietes in any particular situation; and a dilatation of one or all the coats having been once effected, its influence becomes augmented, as the lateral pressure must now be estimated by multiplying the force with which the arterial current is moving, into the area of the diseased surface on which its action is exerted, and the latter being thus a constantly increasing quantity, the increase in the dimensions of aneurisms is, *cæteris paribus*, proportionably rapid. Before, however, the sac has acquired certain dimensions, whether it be a true or false aneurism, its motions and sounds must be considered identical with those of the vessel from which it springs. As the disease advances, it gradually assumes a

figure and dimensions totally different from those of the artery; the relations of the sac and the orifice of communication become more and more disproportionate; hence the current of blood, which may be considered as uninfluenced by the slight inequality of the arterial walls in the first stages of aneurism, has now a distinct lateral as well as an onward motion, and, according to the well-known hydrostatical law, the *vis a tergo* is propagated in both directions(*a*). Aneurism, whether true or false, is capable of assuming a variety of forms, of which the sacculated condition is, perhaps, the most common, in which a globular tumour with a somewhat constricted neck communicates with the vessel by an orifice very variable in size and in the smoothness and other qualities of its edges. On the figure of the sac and the nature of its walls will depend many characters of the motions and sounds, which, as will be shown, are principally influenced by the forces brought to bear on the sac.

For the production of the double impulse in thoracic aneurism, I am induced to consider the existence of such a sac as I have above described absolutely essential, and as I conceive that it may be present in either the true or false form, though *probably* less frequently in the former than in the latter, I am indisposed to agree with M. Gendrin, when he states that true aneurism is *always* accompanied by a single impulse and a single sound. Supposing then a sacculated aneurism of the thoracic aorta in contact with the parietes, the heart's action commences, and the systole of the left ventricle propels the blood into the aorta with a vigorous impulse, part of which is expended in causing the diastole of the arterial wall, and part being propagated in all directions, gives the blood both an onward motion into the arteries of the neck, and a lateral mo-

(*a*) The motions of thoracic aneurism may be often seen when the observer is at a considerable distance; the indications to be thus derived are very valuable, and have been well pointed out by the late Dr. Greene in his essays in the First Series of this Journal.

tion into the sac, communicating to the hand placed over it the sensation of the first impulse. The general elasticity of surrounding parts, and whatever force of this nature is possessed by its own walls (almost all living tissues possess some), come to react and a small portion of the blood is expelled from the sac, constituting the movement of retraction, immediately subsequent to which comes the systole of the arteries, which again impels some blood into the sac, and being thus again made to strike the hand, constitutes the second impulse. These causes may be also adduced to explain the occurrence of the sounds which I look upon as secondary in importance to the impulses. The ingress of each wave of blood into the sac may be readily conceived to be accompanied by sound; and in the condition of the orifice of communication, as to roughness, smoothness, projection of coagula, &c., we find adequate cause to explain the different modifications which they present.

If we now conceive an aneurism whose figure is not sacculated or spherical, the curvature of whose walls *gradually* loses itself on all sides in that of the arterial parietes, the whole presenting a fusiform shape, and especially if it retain the middle coat, as in true aneurism, we have a tumour quite adapted for conveying a powerful first impulse when the ventricular systole comes to act on the column of blood; but the divergence being little, the walls of the aneurism may react simultaneously with those of the artery, and we thus lose the second impulse, while the second sound may or may not be present, as it is dependent on the condition of the internal surface of the vessel, which, if rough and uneven, may cause a first sound as the blood passes over it after the ventricular systole, and a second when the arterial systole again impels the column onwards. Thus, then, if the aneurismal systole be strong and simultaneous with that of the arteries, so that both act as one, we lose the second impulse in thoracic aneurism, while the second sound may or may not be present. If, therefore, true aneurism be less likely to assume the spherical figure than false, the absence of the

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second impulse may, perhaps, be available in approximating to a diagnosis between these two forms of the disease, especially if combined with the observations of Stokes and Gendrin as to the less degree of suffering in the true. The explanation I have given of the impulses and sounds of thoracic aneurism agrees very nearly with that of Gendrin, who, however, states that they are to be found in the abdominal form also. I know, however, of no recorded case of double impulse of abdominal aneurism, though I have alluded before to some cases in which a double sound was heard. An explanation of the absence of the second impulse, and, except in rare cases, of the second sound, in this form of the disease, may be deduced, I think, from the following considerations.

The column of blood in the arch and superior part of the thoracic aorta must be considered as subject to two forces acting at an appreciable interval, viz., the ventricular and arterial systoles, whose influence must be supposed to be combined and simultaneous on particles of blood at a distance from the heart; for in no other way can we explain the single pulsation of the carotid, femoral, and radial arteries. The sequence of actions may be considered to take place as follows. The blood contained in the arch of the aorta, receiving an impetus from the left ventricle, is set in motion towards the extremities, but, before it can be propelled to any great distance, it receives the additional impulse of the systole of the first portion of the aorta, and now continues its course impelled by the combined influence of two forces, that of the ventricular systole being, as it were, overtaken by that of the arterial. It is highly probable that these forces become thus simultaneous in their action in some part of the descending thoracic aorta, and that the ordinary impulse of the abdominal aorta and its branches, as well as that of the carotid, radial, and femoral, is single. Indeed that of the ascending portion of the arch is most probably single also, and it is only when a lateral diverging current is produced into an aneurismal sac, that the arterial systole

manifests itself by giving a second impulse. The systole of the arteries here mentioned is caused by the elasticity of their walls(*a*). If their contractile powers should be brought into action by deranged nervous agency, the phenomena of local arterial pulsation, dicrotous pulse, &c., can be explained. The single impulse of abdominal aneurism, therefore, may, I think, be justly referred to the combined and simultaneous action of the ventricular and arterial systole; while the occurrence of two sounds may be accounted for, the first and normal one by the entrance of the blood, the second, so rarely heard, by the egress, produced by an elastic state of the sac, an explanation which seems corroborated by the condition of the parts in the popliteal aneurism shown me by Mr. Wilmot, which was of the true form, not filled with fibrine, and certainly capable of reacting on its contents.

Art. XII. — *Observations on Hemorrhage.* By J. Moore Neligan, M. D., M. R. I. A., Physician to Jervis-street Hospital, and Lecturer on the Practice of Medicine in the Dublin School of Medicine.

Probably the most frequent symptom and consequence of organic disease is the occurrence of hemorrhage from the blood-vessels of the lungs, the stomach, or the intestines. Much stress is consequently laid upon it as a diagnostic mark of structural changes in these viscera, in the heart, and in the liver; and there can be no question but that, in doubtful cases, it often aids materially in leading to a just conclusion. Yet, valuable a symptom as it is it must be sometimes regarded and treated as

(*a*) With referrence to the arterial systole, I have considered it as due to the elastic force only of the middle wall, called into play after its distention by the portion of the ventricular systole expended on it; but many circumstances induce me to agree with the opinions of Henle, Weber, and others who have demonstrated that a power of active *contraction* resides in the arterial wall, and which is due to the presence of muscular fibre.

a disease *per se;* and although such a view of hemorrhage cannot be looked upon as pathologically correct, therapeutically considered it often leads to the best results as regards treatment.

When hemorrhage to a moderate degree recurs at intervals, and is manifestly dependent on the existence of organic disease, it is, of course, most effectually controlled by the employment of remedies calculated to relieve the condition on which it depends; but when it takes place suddenly to any considerable extent, the immediate indication of checking it must be fulfilled by means more directly applied. It is in consequence of this that hemorrhage is so much more commonly treated as a disease than as a symptom, and that effectual plans for stopping it are so anxiously sought after.

Apart from direct injury, the most common cause of bleeding is congestion, and it therefore occurs generally from the surface of mucous membranes in which the venous system is much developed and liable to sudden alterations in the quantity of blood circulating there. Hematemesis, melæna, and hemoptysis, are consequently the forms under which symptomatic hemorrhage most frequently takes place; and it is by epistaxis, or by bleeding from hemorrhoids, that nature most commonly finds a means of relieving congestion not dependent on organic disease.

Hemorrhage from the mucous membrane of the digestive organs is sometimes the earliest symptom by which attention is directed to the existence of organic disease in the abdominal cavity; but it more usually takes place after more direct symptoms had been long previously recognised, and not uncommonly is the mode by which life is terminated in these affections. Under every circumstance it is highly alarming, and calls for the most prompt and energetic treatment. This is especially the case when it occurs in the form of hematemesis, as it is then with more difficulty controlled, and is more apt to recur, than when there is simply melæna; this seems to

depend on the size of the stomach compared with that of any of the intestines, permitting a much larger accumulation of blood in its cavity before it contracts on itself, which is evidently the natural mechanical method by which the bleeding is checked.

In the administration of remedies to stop the hemorrhage, the chief indication to be fulfilled is therefore manifestly to produce contraction of the stomach, whether the bleeding be symptomatic of organic disease or not. With this view we should be guided in the choice of styptics or astringents, and they should be administered in a concentrated form, or rather as little diluted as possible, so as not to distend the stomach. In hematemesis or melæna I place most reliance on oil of turpentine as a styptic, and on gallic acid as an astringent; the former, by its stimulant property, excites the stomach and intestines to contract, and the latter may be given in the solid form, and is very powerful in small doses. Ice has been often prescribed to check hemorrhage from the stomach; but its tendency, when dissolved, to distend the organ, and to favour further bleeding by diluting the blood that may have previously escaped from the vessels, constitutes, I think, a very serious objection to its employment. As to blood-letting, it is only admissible in those few cases where the hemorrhage seems to be dependent on general plethora, and even in these must be regarded rather in the light of after-treatment than of an immediate remedy.

The diet in all cases of hemorrhage from the stomach or intestines must be absolute. Nourishment should be given in a concentrated liquid form, perfectly cold, and in the smallest quantities at a time; and a return to the usual articles of diet should be permitted with the utmost caution.

The following case will illustrate more fully the most important points in practice which are above noticed. It is also an example of what may be termed the idiopathic form of gastro-intestinal hemorrhage, which sometimes occurs in per-

sons of a spare habit of body, apparently in the enjoyment of good health, and without any signs of the existence of organic disease.

Mr. D., aged 43, of middle height, rather slight make, and sallow complexion, subject to occasional laxity of the bowels for the last two years, but otherwise in the enjoyment of good health, was attacked on the 8th of April, 1849, with diarrhœa and vomiting; the evacuations were watery and attended with tormina, and the vomited fluid seemed to contain much bile. He could assign no cause for the attack. On the following morning, the 9th, he vomited blood, and also passed some by stool. He was now seen by Mr. Oldham, who prescribed acetate of lead and opium for him. On the third morning he was awoke at 6 o'clock, A. M., by a recurrence of the bloody vomiting, which was represented as having been very copious, amounting to more than a pint of pure blood, and he also passed some blood by stool immediately afterwards. On the same day, at half-past 4 o'clock, P. M., he was again attacked with vomiting and purging of blood; and at 6 o'clock, P. M., I saw him for the first time.

The blood which he had last vomited was shown to me; it was grumous, of a blackish-red colour, and amounted to a pint and a half; that passed by stool was nearly similar in appearance, somewhat darker coloured, amounted to two pints, and was totally unmixed with fæcal matter. He was at this time exceedingly weak, and inclined to faint if he raised his head off the pillow; the whole surface of the body was blanched; the pulse intermittent, 120, very feeble and compressible, and dicrotous; the abdomen was tumid, pressure on it did not cause pain, but produced much borborygmus; the feet and hands were cold; and he complained of intense thirst. He was ordered to take immediately a draught consisting of thirty minims of oil of turpentine, a drachm of mucilage, and three drachms of water, and in an hour afterwards a pill containing two grains of gallic acid: the draught and pill to be repeated

alternately every hour. He was allowed to sip occasionally, but in very small quantity at a time, raspberry vinegar and ice-cold water, one part of the former to four of the latter; and a tea-spoonful of cold strong beef tea was directed to be given to him every ten or fifteen minutes. Hot jars were applied to his feet; and he was ordered to be kept as quiet as possible, and to remain in the recumbent position. I saw him again in six hours afterwards, when the pulse was 110, less intermittent, still dicrotous, but a little fuller; he had no return of the bloody vomiting or purging, had slept at intervals, and expressed himself now as feeling stronger. The draught and pills were directed to be continued, and the nourishment and drink as before.

April 11th, fourth day. At 6 o'clock, A. M., the vomiting and purging of blood both returned; the quantity was very much less, not exceeding altogether a pint and a half; it was also very much darker in colour. The pulse was 96, irregular, feeble, less compressible, and not dicrotous; the abdomen was soft and not tumid. He slept occasionally during the night, and felt much stronger. The cold beef tea was directed to be given in larger quantity and with greater frequency, but no other article of nourishment was allowed. The draughts and pills were ordered to be taken every third hour alternately. At 5 o'clock, P. M., the pulse was 84, improved in every respect; and there had been no return of the hemorrhage. The pills and draught were ordered to be continued as in the morning.

April 12th, fifth day. No return of the hemorrhage; he had slept several hours during the night, and had gained strength; the pulse was stronger and less compressible, 94. He was now allowed a more liberal diet, but everything was still directed to be taken cold. In the evening an enema consisting of two pints of tepid water was administered; it brought away some very dark grumous blood.

April 14th, seventh day. The bowels have not yet been

moved naturally; but he has gained much strength, and is able to sit up in bed for a short time. He was ordered two cathartic pills, consisting of seven grains of compound rhubarb pill and a grain of extract of hyoscyamus; and one of the gallic acid pills to be taken twice daily; the turpentine draughts to be omitted.

April 15th, eighth day. The pills not having operated, the tepid water enema was ordered to be repeated; it acted freely, the evacuations were dark, but contained much natural feculent matter.

April 16th, ninth day. Bowels moved naturally; gaining strength rapidly; sleeps well; appetite good; able to get up for some hours. All medicines were discontinued.

From this date he quickly regained his usual health, and has since remained quite well, nearly twelve months having elapsed; but he has not quite lost the blanched appearance consequent on the hemorrhage.

This seems to have been a case of simple hemorrhagic exhalation from the mucous membrane of the stomach. After the recovery of the patient I examined him with the greatest care, but could not detect any evidence of the existence of organic disease; and had any existed it is almost certain that, in the interval which has since elapsed, it would have been manifested by the occurrence of some of the ordinary symptoms. The quantity of blood lost was very great; from the account given me by the gentleman's wife, a highly intelligent lady, and from what I saw myself, it could not have been less than eight pints in the first three days of his illness. The efficacy of the plan of treatment adopted was proved by the rapidity with which the hemorrhage was checked, and by his ultimate recovery without any return of the bleeding.

I regard gallic acid as our most valuable astringent in hemorrhage from the mucous membrane of the digestive organs, from the uterus—in many cases of bleeding from which I have seen it prove of the greatest service, and from the urinary organs;

of the latter two interesting cases in which its efficacy was shown, are related by my colleague, Dr. J. S. Hughes, in this Journal(*a*). When the case I am now about to describe occurred, I was not aware of its decided effects in controlling hemorrhage from the stomach; I therefore trusted to oil of turpentine alone. It is an example of hematemesis dependent on organic disease of the liver, by which life was terminated in a few hours.

James Fletcher, aged 32, was admitted into Jervis-street Hospital, November 18th, 1843. It was stated that he had been suddenly attacked with vomiting of blood about an hour ago, it being now 4 o'clock, P. M., which had continued since almost without intermission. I saw him about half an hour afterwards; he was then very feeble, quite blanched, his voice reduced to a mere whisper, the extremities cold, and the pulse scarcely to be felt at the wrist. He had vomited nearly four pints of fluid blood since his admission, and it was now coming up almost continuously in mouthfuls. He was immediately ordered an ounce draught containing thirty minims of oil of turpentine and a drachm of mucilage, and one such to be repeated every fifteen minutes; hot jars to his feet, and sinapisms to his legs; and to be allowed to sip ice-cold water. The vomiting of blood was not in the least controlled, and he died about two hours after his admission. On *post mortem* examination, the liver was found in a very advanced state of cirrhosis, the spleen enormously enlarged, and large patches of the mucous membrane of the stomach congested with blood; but, as is usual in these cases, no rupture of any vessel could be discovered(*b*).

(*a*) New Series, vol. iii. p. 275; and present Number, p. 309.

(*b*) This was the first case of three which have fallen under my observation in which there were a much atrophied cirrhosed liver and an enlarged spleen, without any dropsical effusion into the abdominal cavity. Fletcher had been twice previously in Jervis-street Hospital under my care. On April the 10th, 1843, he was first admitted; he then stated that he had lived an

Hemorrhage from the lungs occurs most frequently as a consequence of tubercular disease; but it also takes place, and I think more frequently than is commonly believed, as the result of simple congestion. When it is caused by organic disease of the heart or of the abdominal viscera, the bleeding takes place most usually into the substance of the lungs, constituting pulmonary apoplexy; we may or may not have hemoptysis as an evidence of the latter, but when it does occur it is generally to a small extent.

Hemoptysis, from what I have termed simple congestion, is described by most writers as dependent on general plethora, or a superabundance of blood in the system, and it certainly does occur most frequently in individuals thus characterized; but I have seen it not unfrequently in persons of a spare and apparently anemic habit of body, who did not present the least trace of tubercular or other organic disease.

Its treatment when dependent on this cause is sufficiently

irregular life, working occasionally very closely at his trade, but always in the habit of tippling—drinking almost every day two or three glasses of raw whiskey, and getting drunk once every month or six weeks. He had never been ill so as to be confined to bed, but sometimes suffered from pain in his right side, and dyspeptic symptoms. At this date his ankles were œdematous, but only so in the evening; the swelling disappearing almost completely after the night's rest. The spleen was felt to be much enlarged, and the liver, which was very small, could, by careful manipulation, be distinguished as nodulated on the surface, the abdominal parietes being exceedingly thin and lax. I therefore diagnosed the case as one of cirrhosis, although the most marked symptom, according to the then received opinion, namely, ascites, was absent, and, moreover, the spleen was enlarged. He left the hospital in a week, as he said that he felt quite recovered; the only treatment adopted having been the administration of mild mercurial purgatives. He was readmitted on November 11th, having, according to his own account, spat up some blood that morning, but he left hospital the same evening. And his third admission was on the occasion narrated in the text.

The second case was that of a woman who died in the hospital a few days after her admission. She had cancer of the uterus, fatty heart, cirrhosed liver, and enlarged spleen. I could not learn anything of her previous history, but there was no dropsical effusion in the abdominal cavity at the

simple: local bleeding from the surface of the chest by cupping, or general blood-letting, the former of which I prefer in all cases; the administration of saline cathartics in active doses; rest, especially of the respiratory and vocal organs; and low diet for a few days.

I have met with several cases of this congestive hemoptysis, in which the bleeding continued to an alarming extent, the result of which has proved, now that some years have elapsed, that the hemorrhage was not caused by the presence of tubercles in the lungs. I cannot, therefore, but think that Louis was much in error when he made the following statement, which, if correct, would necessarily lead to a very unfavourable prognosis in every instance: "It is impossible, as it appears to me, not to admit that, with a few unfortunately too rare exceptions, hemoptysis, when at all severe, denotes tuberculous disease of the lungs"(*a*). In one instance, that of a medical friend, I have his own authority for stating, that more than twenty years have

time, nor did the *post mortem* appearance evidence that there ever had been any.

The third case was that of a stout man, aged apparently about 45, who was brought to the hospital from the steam-packet quay in a state of collapse, caused by exposure to cold on the deck of a steam-packet, on his passage from Liverpool on the preceding night. He died about an hour after his admission, and nothing could be learned of his previous history. The *post mortem* examination revealed a much cirrhosed liver, the gall-bladder containing many gall-stones, and an enlarged spleen, but no traces of peritoneal dropsy.

Casts of both liver and spleen of the first and last cases are in the Museum of the Dublin School of Medicine.

My friend Dr. Lyons has recently exhibited before the Pathological Society of Dublin, a specimen of cirrhosis of the liver with enlarged spleen, which he found in a male subject in the dissecting-room, in whom there were no traces of ascites. This was the second instance that had come under his observation: the details of the first were inserted in the Dublin Medical Press in last December. In both an attempt had been made to establish a collateral circulation; in the former by the rachidian sinuses and the vena azygos, and in the latter by the diaphragmatic veins.

(*a*) Louis on Phthisis, Sydenham Society's edition, p. 168.

now elapsed since he suffered from an attack of severe and protracted hemoptysis, and that he has never had the least symptom of the presence of tubercles in the lungs: he is at present in the enjoyment of the most robust health.

An illustrative example of this form of hemoptysis occurred in my practice about three years since. A gentleman, aged 20, who had been for some years an hospital pupil of mine, rushed hastily into my study, and showing me his pocket handkerchief, which was dyed with red blood, said that, while walking quietly along the street, he suddenly felt a tickling in his throat which compelled him to cough, and on expectorating he perceived that he spat up pure blood; the cough and hemoptysis continued, and before he reached my house, a period of time which could not have exceeded ten minutes, he conjectured that he must have expectorated at least six ounces of blood. He was blanched, evidently with terror, when he came to me, and the hemoptysis was then very profuse; his pulse was full and hurried, and his respiration quick. On examining his chest, a coarse gurgling rhoncus was to be heard in the large bronchial tubes, but there was not the least dulness on percussion, and the vesicular respiration was healthy; he had never previously suffered from cough. He stated that latterly he had been leading a sedentary life, indulging rather freely, and smoking somewhat to excess, and that within the last few months he had grown very full. I immediately had sixteen ounces of blood abstracted by cupping over the surface of the chest; and directed him to take an active saline cathartic draught, containing sulphate of magnesia and dilute sulphuric acid. The hemoptysis quite ceased in the course of that evening, and has never since returned; he is now an assistant-surgeon in the army, and in the enjoyment of excellent health. The only further directions given to him at the time of the attack were to live low for some days, avoid every cause of excitement, and keep the bowels acting by the occasional use of the draught that had been ordered for him.

Hemorrhage from the back of the pharynx may be mistaken for the hemoptysis of congestion of the lung, and the throat should therefore be carefully examined in every case of spitting of blood. A lady whom, for some years back, I have occasionally attended for relaxed sore throat, with follicular enlargement of the pharynx and tonsils, has suffered at three different periods from hemorrhage from the throat. The first attack that I witnessed occurred about two years since, and was evidently caused by walking for some time *against* a cold north-east wind. The bleeding lasted for several hours; and on examining the pharynx with the mouth speculum, I could see the blood trickling from the surface. Irritating the epiglottis as it flowed downwards, it was brought up with a cough, and, being of a florid colour, the case might be easily mistaken for one of hemoptysis. The hemorrhage was readily checked on this and on a subsequent occasion, when it was apparently produced by a similar cause, by the application of a solution of nitrate of silver, containing a drachm of the salt to the ounce of distilled water.

Hemoptysis, when dependent on tubercular disease of the lungs, is, in most cases, an early symptom, especially when it occurs to any extent; yet it not unfrequently takes place subsequently to softening, but the bleeding is then very rarely excessive. The reasons for these facts are so well known that I need not here enter into any account of them. It seldom proves fatal in phthisis, although it is often very alarming; but as it tends to weaken the patient much, and thus render the further progress of the disease more rapid, it is an object of importance with the physician to check the bleeding as quickly as possible. The treatment to be adopted while the hemorrhage is going on is sufficiently simple, but there is a practice very commonly adopted, and which bears the sanction of many eminent names, that I think cannot be too much condemned; I refer to the application of cold externally to the surface of the chest: the injurious effect it must produce, by causing a de-

termination of blood to the internal organs, is sufficiently manifest. General or local blood-letting is admissible in but very few cases,—those in which there is evident plethora of the entire circulating system.

The plan of treatment which I have found most successful is the following: the patient should be placed in a cool bed, with the shoulders well raised, and in warm weather near an open window; the vegetable refrigerant astringents freely administered; acidulated saline cathartics prescribed; and the surface of the chest *dry-cupped.* The strictest quiet must be enjoined, and the least exertion of the voice prohibited. The following case of phthisical hemoptysis,—the severest, as regards the quantity of blood lost, that I have ever witnessed,—will illustrate these remarks. It was reported by Mr. Fitzgibbon.

Bridget Brannagan, aged 36, a servant, was admitted into Jervis-street Hospital, November 5, 1849. She had suffered for some time from cough, pain in the side, shortness of breath, and occasional fits of impending suffocation. On this day, while working very hard, washing clothes, she was suddenly seized with an attack of difficulty of breathing and spasmodic cough, which ended in the expectoration of florid frothy blood: what was first spat up she says was black. The bloody expectoration, with a short cough, has continued without intermission for some hours; the quantity of blood lost, according to the account of her friends, amounting to nearly six basinfuls. On admission it is reported that her countenance was blanched, haggard-looking, and anxious, her forehead covered with a cold clammy perspiration, and her pulse weak and tremulous, scarcely to be felt at the wrist. She was at once placed in bed with the shoulders well elevated, and heaters were applied to her feet. Mr. Magrath, the resident apothecary, ordered her a mixture containing acetate of lead and acetum opii.

On the next morning I saw her for the first time; the hemoptysis continued throughout the night without intermission, and the quantity of blood expectorated very nearly filled a

large wash-hand basin; it was frothy, and of a bright florid colour. The entire surface of the body was bloodless, icy cold, and covered with clammy perspiration; the voice was low and whispering, scarcely to be heard; and the prostration was extreme. The pulse could not be felt at the wrist; in the carotids it was dicrotous, irregularly intermittent, 120 in the minute. She was ordered to take an ounce, every hour, of a mixture containing two ounces of distilled vinegar, an ounce of treacle syrup, and five ounces of water; and the surface of the body and extremities were directed to be kept warm.

On the third day it was reported that the hemoptysis had been gradually decreasing since the previous evening; the pulse could be felt at the wrist, and the surface of the body was warm. On examining the chest, there were physical signs evidencing tubercular consolidation beneath the right clavicle, and in the left dorsal region. She was ordered to be dry-cupped over the chest anteriorly and posteriorly, the mixture to be continued, and a cathartic draught, containing sulphate of magnesia and dilute sulphuric acid, administered.

From this time she gradually improved,—the hemoptysis having quite ceased on the fourth evening,—until the seventh day after her admission, when she was attacked with pleuritic stitches, vomiting, and a return of the hemoptysis, but not at all to the same extent as before. The mixture was again repeated, with the addition of a drop of creasote every second hour, the dry-cupping again applied, and the acidulated saline cathartic as before administered. To this treatment the symptoms yielded at once, and the hemoptysis did not again return while she was in hospital, which she did not leave until December 9, having suffered from the ordinary symptoms of phthisis, especially hectic and colliquative sweats.

When the bleeding takes place into the substance of the lung, it generally gives rise to the group of symptoms denominated pulmonary apoplexy; this, as I have before said, may or may not be attended with hemoptysis. It is usually a conse-

quence of organic disease of the left side of the heart, which produces engorgement of the blood-vessels of the lungs, giving rise to dropsical effusions in the old, the broken-down, and the debilitated, and to hemorrhage in the young, the strong, and the plethoric. I have, however, frequently seen this disease occur in individuals who had no organic disease, in whom it was, apparently, produced by cold, over-exertion, or any other cause which might produce congestion of the pulmonary vessels. This form of hemorrhage very rarely proves as suddenly fatal as cerebral apoplexy sometimes does; I have been able to find only two cases on record in which it did so; but I have recently seen an instance in which immediate death was caused by it, as far as could be judged from the symptoms, there having been no examination after death. This was the case of a young married lady, nineteen years of age, who had been always, as I was informed, in the enjoyment of excellent health; she had been four months married, and had aborted a month previously, the abortion being attended with much hemorrhage, which weakened her exceedingly, so that she had not left her room until the evening of her death. She spent that evening in the drawing-room with her family, in the enjoyment of restored health, and in the highest spirits; she sang a great deal, being the first time she had exerted her voice since her illness, but did not complain of fatigue. On retiring to her bed-room she sat down at the fire talking to her husband, when she suddenly complained of feeling weak. He immediately placed her on the bed, when she gave a few convulsive sobs and never moved afterwards. I was immediately sent for, and saw her in about twenty minutes; the surface of the body was then nearly cold, and very pale, and the mouth was partly filled with frothy bloody serum. I opened the jugular vein, from which about a drachm of blood flowed; but she was at this time quite dead.

As regards the treatment of pulmonary apoplexy, I have not any new facts to offer. The plan I have found most suc-

cessful will be best illustrated by the narration of a few cases. The first is especially interesting from the fact that the man was twice under treatment; on the second occasion he succumbed to the disease shortly after admission into the hospital, and the appearances presented by the partially absorbed clots of the first attack were well exhibited, and proved the correctness of the diagnosis then made. The case was reported by Mr. Farmer.

Charles Farrell, aged 34, by occupation a dealer, was admitted into Jervis-street Hospital, June 17th, 1845, affected with spitting of blood, accompanied by intense pain in the lower part of the right side. He states that the hemoptysis commenced three days ago, and has continued since, but not to any extent, not more than a cupful of blood being spat up daily. The pain is of a dull character, but severe, yet little aggravated by taking a deep inspiration; he cannot ascribe his illness to any particular cause, except his having had inflammation of the lungs about six months ago, from which he never recovered completely. There was no fever about him; the surface of the body was cool, and the pulse 84, compressible; but he was dull and heavy, answering slowly and stupidly the questions put to him. On examining the chest, well-marked dulness was audible over the middle of the right dorsal region, in which part the respiration was feeble, and accompanied by a coarse crepitant ronchus, not regular or constant. The sputa, which consisted almost entirely of blood, adhered to the sides of the spitting-cup.

The disease was diagnosed to be pulmonary apoplexy. He was ordered to be cupped to sixteen ounces from the dorsal regions of the chest, and to take a pill containing two grains of calomel and a fourth of a grain of opium night and morning.

June 22nd, fifth day from admission. There has been a gradual improvement in all his symptoms, and the quantity of blood in the sputa is very much diminished. A blister was applied to the right side.

On the sixth day the blood had nearly disappeared from the sputa; the cough was less troublesome; and all the physical signs, except the dulness on percussion, were much diminished: he was slightly salivated. The pills were directed to be omitted, and the blistered surface to be dressed with mercurial ointment.

July 1st, fifteenth day. He was discharged from the hospital. The hemoptysis had quite ceased for some days, but there was still some dulness on percussion, with bronchial respiration and weak vesicular murmur over the right dorsal region.

This patient was re-admitted on the 26th of November following. He was partly unconscious, and, from the account given by his wife, who accompanied him, it appeared that he remained well, except occasional cough, but no hemoptysis, until two days since, when he suddenly became insensible after having spat up about a cupful of blood. The vesicular respiration was very feeble in every part of the chest; there was a general coarse mucous ronchus; and over the left scapular region there were complete dulness on percussion and bronchial respiration. The dulness over the right lung, where it had existed when he was previously in hospital was now very trifling. The same treatment was used as when he was formerly in the hospital, but he died in a little more than forty-eight hours after admission.

On examination after death the bronchial tubes of both lungs were found to be filled with frothy bloody serum; the superior posterior portion of the lower lobe of the left lung contained a recent apoplectic clot of blood as large as a man's fist, and there were three smaller clots in the lower posterior part of the upper lobe. In the right lung the upper portion of the lower and the inferior portion of the middle lobes contained each in their posterior part, the remains of large clots which had partially undergone absorption. They were of a reddish-

yellow colour on their circumference, dark red in the centre; the lung surrounding them was apparently sound. The heart and other viscera were in a perfectly healthy condition.

This case differed in many respects from most others that I have seen, but especially in the extent to which the hemoptysis occurred, and in the absence of unconsciousness in the first attack, which I believe depended on the blood escaping outwardly through the bronchial tubes. The other general symptoms and the physical signs were, however, so well marked as to prevent any difficulty in the diagnosis. The following is an example of the more ordinary form in which the disease is presented to the physician. It was reported by Mr. George C. Cotter.

James Bell, aged 30, was brought to Jervis-street Hospital November 23, 1847, in an insensible state; the extremities cold, and the pulse scarcely to be felt at the wrist. The persons who brought him in stated that he had been found lying on the Drogheda Railway, on which he was a labourer, and that they knew nothing of him, but supposed he had been bruised between two trucks. He was consequently admitted into the accident ward, under the care of Mr. Power, the surgeon on duty, and the usual remedies having been applied to restore animation, after some perseverance circulation was re-established in the extremities, when some consciousness quickly returned. He was, however, unable to give any information as to what had happened to him, but was positive that he had received no injury of any description. He mentioned, however, that he had been suffering from a slight cold for two days, and that during a part of each day he slept on the top of a truck in the open air, exposed to the inclemency of the weather, which was at this time very severe. There being no evidence of any injury after the most careful examination, the patient was transferred to the medical wards on the next day.

His countenance was at this time pallid and indicative of distress; the pulse very small, weak, and compressible, 80; the

breathing short, but not hurried; and morbid heat of the whole surface of the body. On making a stethoscopic examination, the following physical signs were manifested; puerile respiration in the sub-clavicular region of the left side, extending over more than half of the anterior surface of the chest; some dulness on percussion in the mammary, and complete dulness in the lateral and dorsal regions of the same side, with absence of respiratory murmur and bronchial respiration. The sounds of the right side were normal, both on percussion and auscultation. It was evident that he expanded the right side of the chest more than the left during each inspiration. There is no cough, but early this morning he expectorated one small coagulum of black blood. Previously to my seeing him, some leeches, and afterwards a small blister, had been applied to the left side. He was now ordered six ounces of wine, and to be dry-cupped over the whole of the left lung, except where the surface was sore from the blister.

November 25th, third day. He appears to suffer less; the breathing is more prolonged, twenty in the minute; the pulse still weak, 80; the tongue brown in the centre and white at the edges and tip; the face flushed. The vesicular murmur has in some degree returned in the left inferior dorsal region, but it still sounds dull on percussion. The right lung is somewhat affected to-day, sounding somewhat dull in the inferior lateral region, with an indistinct crepitant ronchus where the dulness ceases. He complains of pain in the left side; but he has not the least cough. Ordered to take, every six hours, a pill containing two grains of calomel, and a third of a grain of opium; the wine to be repeated.

November 26th, fourth day. Much improved; the pulse has regained its strength, and the breathing is full, 17 in the minute; the vesicular murmur is still very feeble in the parts before noticed, but there is rather more resonance on percussion. A large blister was ordered to be applied to the right side, and the pills to be continued. To have full diet.

November 29th, seventh day. It is reported that the patient is improved in every respect. He has been up for the last two days; the vesicular respiration is rather more distinct, but the dulness still exists; he is slightly under the influence of mercury; the pills were ordered to be discontinued.

December 1st, ninth day. He was discharged from hospital to-day, as he said that he felt quite well and able to work. There is still dulness, and some bronchial respiration over the left dorsal region.

In this case the hemorrhage into the lung, and the consequent pulmonary apoplexy, which was so well marked, seems to have been caused by prolonged exposure to cold; for there was not the least indication of organic disease of the heart.

The following is an example of the same affection produced by a violent strain:

Richard Tuite, aged 40, a labourer, was admitted into Jervis-street Hospital, November 17th, 1849. He states that as he was carrying a deal plank on his left shoulder up an inclined plane, on the 8th instant, in the Custom House Yard, his foot slipped, and, in endeavouring to save himself from the plank, which fell off his shoulder, he got a severe strain of his left side. He was taken up in a state of insensibility, but revived in a few minutes on the application of cold water to his face and chest; he suffered severely from difficult breathing and pain in the side for the next four days, so much so as to confine him to bed, and on the fifth day he began to spit blood of a dark colour, and in clots. He has been in the army, and served several years in India; while there he was profusely salivated for disease of the liver, and for chronic rheumatism: for the latter disease he was discharged from the service.

On admission into hospital his face and head were congested, his lips livid, and eyes suffused; he complained of great debility and loss of appetite. The respiration was slow and laborious; the pulse feeble, compressible, 80. Altogether he presented the appearance of a person in whom reaction was

not fully established after an accident. Percussion elicited a dull sound over the axillary region, and over the adjacent parts of the mammary and dorsal regions, of the left side. In these parts the vesicular respiration was absent, but bronchial respiration and bronchophony were distinctly marked; there was puerile respiration in the other portions of the left lung; the sounds in the right side were normal. The expectoration was rather scanty; it consisted of a very adhesive bloody mucus. He was ordered to take a pill containing two grains of calomel and a fourth of a grain of opium every sixth hour; and to be dry-cupped over the left side of the chest. This man improved rapidly: on the third day after his admission a blister was applied to the side, and the blistered surface was dressed with mercurial ointment; on the fifth day he was slightly salivated, when the pills were omitted; and on the tenth day he was discharged at his own request, as he felt quite well. Dulness on percussion, and bronchial respiration were, however, still audible in the same parts as before, but to a less extent, and not so well marked.

Before concluding these observations, I wish to notice another form of hemorrhage, namely, that which occurs in individuals of what is termed the hemorrhagic diathesis, which so invariably proves fatal, and of which we know so little, either of the pathology, causation, or treatment. I refer to it at present more with the view of adding an additional case to those already on record than of proposing any theory regarding it. I believe it to be an aggravated form of purpura, in which the blood transudes freely through the mucous membranes, instead of being effused beneath them or the skin, as in that disease; and from my experience of the cases of it—but few in number, however—which I have seen, I do not think the plan of treatment by large purgative doses of oil of turpentine, which I found to be so useful in purpura hæmorrhagica(*a*), is appli-

(*a*) Dublin Journal of Medical Science, First Series, vol. xxviii. p. 189.

cable to this form. The following case was reported by Mr. J. E. Dyas.

Ellen Seery, a servant, aged 18, was admitted into Jervis-street Hospital, November 8, 1847. She states that about a month since, while standing at the kitchen fire in the evening, she was suddenly seized with pain in the back, stomach, and head, when she became insensible, and remained so for some minutes; the pain continuing in her head for more than an hour. She then fell asleep, and awoke in the morning quite well. In a week afterwards she was again attacked with pain in her head and back, which was followed by bleeding from the nose and gums, but as it did not prevent her from working, she did not seek for medical advice until the present, when she was compelled to do so from extreme debility, which has been daily becoming worse, the bleeding having continued for the last three weeks. Her menses have been perfectly regular. She never heard that any of her family had been subject to hemorrhages.

On admission, she was exceedingly feeble; the surface of the body completely blanched, the lips even being quite pallid; and she was inclined to faint on the least exertion. The pulse was very small and compressible, 90, not dicrotous. The respiration hurried, and the voice weak. There was a continued oozing of blood from the nostrils and from the gums; the latter, when wiped quite dry, were, in a few seconds, covered with black blood, which could be seen to exude from innumerable points, and when left to herself she was almost constantly removing clots of blood from them with her fingers. Her appetite was bad, and her bowels had been confined for the last three days. She was ordered a draught, containing half an ounce of sulphate of magnesia in two ounces of the acid infusion of roses; and to have strong beef-tea constantly. The next day the bleeding from the nostrils ceased, but seemed to be rather more copious from the gums. She was ordered to use a concentrated solution of alum as a gargle; and there be-

ing extreme debility, and a constant tendency to faint, to have four ounces of red wine and a tumbler of porter; the latter at her own request.

On the fourth day after her admission, November 12th, the bleeding did not seem to be in the least degree checked; it was only from the gums, in which there could not be discovered the slightest abrasion. The debility was very great, the pulse dicrotous, 90, feeble and compressible. She was ordered to take, every second hour, a draught containing half a drachm of oil of turpentine, half a drachm of mucilage, and two ounces of water; and to have six ounces of red wine. This treatment was continued until the eighth day after admission, November 16th, with but little apparent effect on the hemorrhage from the gums; the debility was increasing, and she now complained of tinnitus aurium. A mixture was prescribed for her, containing twelve grains of acetate of lead, a fluid drachm of acetum opii, seven ounces and a half of distilled water, and half an ounce of syrup, of which an ounce was to be taken every second hour. A solution of nitrate of silver, ten grains to the ounce of distilled water, was ordered to be applied freely to the gums; and the wine was increased to eight ounces in the twenty-four hours.

November 17th, ninth day. Bleeding not lessened; the stomach has been constantly sick since the administration of the mixture was commenced. It was omitted, and a draught containing four grains of gallic acid, suspended by means of mucilage in an ounce of water was prescribed, to be taken every second hour; she was allowed the saline mixture in a state of effervescence with lemon-juice, to allay her thirst, which was extreme.

November 18th, tenth day. Bleeding unchecked, and not in the least influenced by the nitrate of silver, which was applied in the solid form to the gums. Some spots of purpura are visible on the chest and arms, and the debility is daily becoming more extreme. On the eleventh day, as the stomach rejected the draughts containing the gallic acid, it was given

in the same doses in the form of pill, and a turpentine enema was administered.

November 20th, twelfth day. Hemorrhage continued constantly. Ruspini's styptic was applied to the gums, and folds of lint wet with it were placed between them and the inside of the cheeks, but without the least effect on the bleeding, which exudes just as freely as on the day of her admission. In the evening she was evidently sinking, and she died in the course of the next day.

After death, the body presented a perfectly bloodless appearance, so much so that there was not the least sanguineous engorgement of the depending parts even twenty-four hours after life had been extinct, when the examination was made. Here and there a few spots of purpura were scattered over the surface. On cutting through the integuments of the thorax and abdomen, the muscles exhibited a bright red colour, and were thickly coated with fat; proving that there was no connexion between this disease and scurvy, which was then prevalent in the city. All the internal organs presented a perfectly healthy aspect, except the left lung and the heart, which were thickly dotted over with spots of purpura. On the heart some of the spots were of the size of a pea, extremely dark in colour, but most of them were florid red, about the size of a pin's head.

This case differs in many respects from most of those that have been recorded, in which a fatal result followed from idiopathic hemorrhage. There was in it no evidence of the existence of a hemorrhagic diathesis until about three weeks before her death; and from details obtained from her friends it appeared that none of her relatives, either by the father or mother's side, had been liable to hemorrhage in any form. From the prevalence of scurvy in this city at the time, it was believed by many who saw the case that it was a form of that disease; but this opinion was contradicted by the manifest difference between the symptoms and those of scorbutic patients then in

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the hospital,—as especially marked by the condition of the gums, the absence of blotches of blood on the surface of the body, by the appearances presented after death, and by the fact that the girl had not been exposed to any of the causes by which the epidemic of scurvy was produced.

It must be admitted that we know but little of the causation or pathology of hemorrhage of the character of that which occurred in this last example. It is a rare form, and light can be thrown on it only by the accumulation of cases; with which view, as I have before remarked, I now publish it. The same observation applies to the treatment; but I think it may be concluded, that any remedies, to prove effectual, must be had recourse to in the very commencement of the disease; for it would appear that when once the capillary circulation of the mucous membrane acquires the habit, so to say, of permitting the transudation of the blood, the difficulty of checking the hemorrhage is much increased.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

On the Operation for Strangulated Hernia. By Henry Hancock, F. R. C. S. E., Surgeon, and Lecturer on Surgery, Charing-Cross Hospital, &c., &c. London. 1850. 8vo, pp. 94.

The high position which the subject of hernia deservedly holds in the estimation of all practical surgeons, entitles it to a large share of interest and close consideration. The great present inconveniences of the simplest form of the disease, its prospective dangers, the urgent character of the symptoms evidencing strangulation, the manipulatory particulars to be borne in mind in the operation for its relief, and the host of serious ill consequences accruing from the operation upon the one hand, and from neglect to perform it, on the other,—all stamp this affection with a degree of importance which enforces attention to the subject. The short treatise before us aims at nothing more than offering some observations "on the operation for strangulated hernia;" and the author acknowledges in the commencement that they contain nothing of novelty.

There is evinced at the present day a morbid zeal for every thing that bears the impress of novelty and originality, or, at least, the semblance of them; and while instruction of the most valuable kind is often contemned and disregarded, because founded upon long-established principles, we find every new thought and idea hailed with enthusiastic respect, though they boast of nothing more, in many instances, than a degree of intrinsic ingenuity. Without wishing to cast a slur, the most indirect, upon original or novel views, which, when fully developed, lead so frequently to vast improvements in our science, we would say that this excessive eagerness for what is new, with a contempt for what is old, is too generally the offspring of

misdirected genius, or implies the possession of a mind unsteady in purpose, and not unfrequently devoid of sound information.

Mr. Hancock certainly adheres throughout all his remarks to his introductory admission, that they present no novelty; but they are not from this circumstance the less instructive, and we therefore strongly recommend a perusal of the work, with a confidence that much useful matter will be gleaned from its pages.

The main object of the author is to establish the superiority of the ordinary plan of operating, by which the hernial sac is opened, over that proposed by Petit, and adopted by some eminent surgeons, of dividing the stricture external to the sac; and this he endeavours to do by numerous quotations from the writings of various surgeons, by statistical accounts, and by calling attention to the published results of the two methods. Now we fully concur in condemning Petit's operation, and in inculcating the advantages of opening the sac in all cases; it is the plan we have ourselves followed, and have invariably seen adopted by those whose knowledge and experience we esteem: but, while giving assent to the final conclusions at which our author arrives, we are far from admitting many of the statements which he makes as the premises of the leading argument it is his great object to establish; and we cannot but think that, in his energetic advocacy of the plan of opening the hernial sac, he has evinced a disregard for cutting the peritoneum not warranted by experience or analogy. He says:

"The history of strangulated hernia proves, by every-day experience, that the peritoneum may be cut with impunity. I am willing to admit that, if we cut or irritate healthy peritoneum, we may induce peritonitis, although even this does not always occur; but if we cut inflamed peritoneum, the inflammation does not necessarily increase, especially when that inflammation results from some exciting cause, and by our incision we remove that exciting cause. Our incision, thus, becomes a relief to the patient, whereas, when made in healthy peritoneum, we inflict a violence on the part. I believe, and I am supported in this belief by the observations of Sir C. Bell, that we may cut diseased with greater impunity than healthy peritoneum. The abdominal sections for ovariotomy prove this; the removal of large portions of omentum proves it; the operations for paracentesis abdominis prove it; and the success which attended my case of cæcal disease tends to prove it. Again: is the general peritoneal cavity laid bare by opening the sac? It must be remembered that the communication between the sac and the abdomen is completely closed by the protruding gut or omentum, and that, even when the intestine is returned, it usually lies so close to the

ring that very little, if any, air can penetrate the abdominal cavity, even if it should be injurious, of which I have great doubt, having had patients who, from wounds, have had the abdominal cavity exposed for a much longer time than would be required for the operation for strangulated hernia, and who have recovered without any urgent symptoms."—p. 6.

Again, in answering Key's objections against opening the sac on the ground of the great depression of the vital powers that results from "the exposure of the bowel," he makes the following remarks:

"Such cases do occur, but that they depend upon causes entirely independent of those here assigned may as certainly be proved; they are equally to be met with in operations where no peritoneal sac or serous membranes could by any possibility be wounded, where no bowel could be exposed. And they are also to be met with in operations for strangulated hernia, where the stricture has been divided external to the sac, which has been left entire. How frequently does it fall to the lot of surgeons to meet with such results, after even comparatively trivial operations; and we may readily imagine such train of symptoms succeeding any operation performed upon a patient, whose powers of life are already almost destroyed by the shock experienced from the prolonged constriction of an organ, so vital and necessary to life as the intestine. If such train of symptoms were confined to operations performed in the usual manner for strangulated hernia, we might be disposed to allow the validity of the argument; but we find the reverse to be the case—that patients die precisely under similar circumstances from other operations, as a reference to Mr. Travers' work on Constitutional Irritation will prove."—p. 12.

And at page 14 he endeavours to account for the sudden depression of the vital powers which sometimes occurs after operation, by an analogical comparison with those cases of ascites and retention of urine in which there is rapid sinking after the withdrawal of the fluid.

"Now what takes place in over-distended bladder, in ascites, or in any case where the powers of resistance or restoration are sapped and undermined, may, equally, take place in strangulated hernia, where the part injured is one of the most vital of the body, where the part is exposed to that injury without intermission, for several hours, nay, for days, where the peculiarity of injuries to such part is extreme prostration, a feeling of sinking and death. We cannot feel surprised, therefore, that any operation, under such circumstances, should be succeeded by collapse, even by death; but surely it is going too far to assert that the only obvious cause for such termination is exposure of the bowel, particularly as we find it equally occurs when strangulated hernia has been treated by Petit's operation, or even when returned by the taxis alone."—p. 14.

Now let us examine the sentiments of the author as expressed in the foregoing extracts. It is true that incisions into inflamed serous membranes are much less serious in their consequences than those made into perfectly healthy structures of the same class; but does the admission of this fact furnish the argument that no harm attends the former procedure? Is not the difference in the danger in both cases one of degree or comparison, and not absolute? Should we scarify inflamed serous membrane upon the same principle as we would inflamed fibrous tissues? Or again, admitting, for argument sake, that we do good, or at least, no harm, by the mere incision, is there no apprehension to be entertained from the entrance of air into the abdominal cavity? To this Mr. Hancock answers: "It" (the intestine) "usually lies so close to the ring that very little, if any air can penetrate the abdominal cavity, even if it should be injurious, of which I have great doubt." In reasoning thus, surely our author forgets altogether the subtle nature of atmospheric air. How is it consistent with possibility to slit up the sac, divide the stricture, return the gut, nay more, pass the finger into the abdomen through the ring,—an expedient which Mr. Hancock himself particularly enforces as necessary,—without some air gaining access? What a contrast is here exhibited between the author's views of the properties of atmospheric air and its effects when admitted into the shut cavities of the body, and the opinions of the philosophers and surgeons of old! Furthermore, should it be allowed that incision of the peritoneum, and the entrance of air into the cavity of the abdomen, are productive of no injurious results when inflammation exists, can the same be said of those cases (comparatively rare, no doubt) in which the operation is performed before inflammation sets in?

It must, we think, be evident to every candid and impartial surgeon of experience, that the objections against opening the sac and cutting the peritoneum are sufficiently cogent to have constituted a basis for those arguments, in consideration of which Petit's operation has been propounded; and in admitting these we do not in the least detract from the superiority of the other method. We uphold the plan of dividing the sac and cutting the stricture from within, not, as Mr. Hancock would lead us to suppose, because it is beneficial to cut inflamed peritoneum, harmless to admit air, and that the fears relative to the "exposure of the bowel" are quite imaginary, but because it is that plan *only* which can afford, in any given case, a certainty of success. Against both operations there are objections, but the leading practical one obtains against Petit's; so that we adopt the other, not as the selection from choice, but as a matter of necessity.

With these qualifications, which we consider it but just to impose, we give our full assent to the following observations:

"In performing operations, it is our duty to select that method which is capable of embracing, as far as may be, all difficulties and modifications which may be met with during such operation, and which it is impossible to ascertain before the operation is commenced; and moreover we ought to employ that mode which holds out the greatest certainty of effecting that for which it is undertaken, and of which, in strangulated hernia, we can never be certain, unless the sac be opened. It is of very great importance that we should be able to judge of the condition of the contents of the hernial sac; whether the intestine be healthy, ulcerated, or gangrenous,—whether adhesions confine it to any part of the sac; the condition and disposition of the omentum, the number of protrusions, the condition and arrangement of the sac, whether double, single, or otherwise, and the seat of the stricture, are all matters influencing the success of the operation."—p. 25.

Mr. Hancock makes some judicious remarks upon the taxis. There is no instance in which the evils of temporizing and procrastination are more conspicuous than in strangulated hernia; how frequently does a few hours' delay in performing the operation make the difference between probable success and an almost certainly fatal result? How frequently, while making fruitless attempts to reduce the contents of the sac, are we losing valuable time, injuring the intestine, and rendering the parts in an unfavourable state for the operation which is to follow? No surgeon would, of course, be justified in rushing to the operation without a previous fair trial of the taxis; but the time he expends in his efforts, and the subsidiary measures he brings to his assistance, should depend altogether upon the period at which he is called to the case. If it be soon after the occurrence of strangulation, we should do every thing in our power to reduce the intestine, making repeated trials; and if the efforts be properly directed, the probability is that success will attend them. But where the strangulation has existed for any considerable time, so that inflammation has occurred, and the intestine has become so much engorged from the continuance of the constriction, that the stricture is probably more than double its original degree of tightness, here prolonged attempts to effect the taxis cannot be expected to prove successful, while it is evident that they add "fuel to the fire."

We were recently called upon to operate in a case of hernia which had been strangulated for nearly five days; the sac and its contents, intestine and omentum, were coated with lymph; the intestine was greatly swollen towards the ring, and a large

quantity of dark brown fluid distended the sac. Now, under such circumstances, to imagine that reduction by the taxis could be accomplished is absurd.

The author lays great stress upon the necessity of administering chloroform previously to the employment of the taxis, and certainly it is in general of the utmost value, but sometimes it produces an untoward effect. In many cases complete relaxation,—that degree requisite for success by the taxis,—gradually comes on and advances, under the influence of chloroform, without the least cerebral congestion apparently, or any preceding convulsive movements. But there are instances, and not a few, in which, though anæsthesia be complete, the patient is thrown into violent automatic movements, the muscles being rigidly contracted, and the face indicating alarming internal congestion; in such we have produced a condition which most of all is disadvantageous to our purpose. It may be argued that this spastic state of the muscles will yield, if the agent be sufficiently pressed; and no doubt it will, but not until complete coma shall have supervened. Whenever chloroform produces these unfavourable results, we should at once discontinue its administration; for if our object be merely the suspension of sensibility to pain, it has, probably, been induced before their occurrence; and if we desire to produce muscular relaxation, we may incur the risk of serious consequences. In the case already alluded to, upon which we lately operated, chloroform was given before trying reduction, and under its influence the muscles, particularly the abdominal, assumed a condition perfectly tetanic, so that we were obliged to relinquish its use.

We coincide with Mr. Hancock in reprobating the system of bleeding largely, with the view of rendering the taxis more likely to succeed, and diminishing the chances of inflammation should the operation be performed. In the case of a strong, plethoric man, in whom a hernia has recently occurred, perhaps during some violent exertion, to draw some blood from the system may be attended with very salutary effects; but the notion, that bleeding can anticipate the occurrence of inflammation, originates in an unscientific idea of the nature of that process, and is opposed to the results of experience. The author deprecates the employment of purgatives after the operation, and is of opinion

"That although the action of the bowels is a satisfactory sign, it is a matter of very little importance whether this action takes place immediately, or in the course of a few days after the operation; the cure will proceed equally well, and we had much better wait until the condition of the patient indicates the propriety of inducing ac-

tion. When all symptoms of inflammation have subsided, this may be safely attempted by enemata, which should be mild, and always be employed, in the first instance, before we exhibit aperients by the mouth."—p. 79.

The exhibition of purgatives soon after the operation, before the intestine has regained its power, is decidedly injurious; but we must not fall into the opposite error of withholding them altogether, and allow the patient to die from ileus.

After citing a few cases, and giving a statistical table showing the relative frequency of the different species of hernia, the influence of age upon the success of the operation, and the results of the several modes of treatment, Mr. Hancock sums up his observations with the following deductions:

"A close examination of the statistics and arguments in favour of not opening the sac in the operation for hernia, tends greatly to diminish its claims for superiority over the more usual proceeding.

"That opening the sac does not increase the danger of the operation, but, on the contrary, is to be preferred as the safer mode of proceeding.

"The majority of fatal cases are not consequent upon the exposure of the inflamed or strangulated portion of bowel, caused by the opening of the sac, as is stated by Key.

"Comparatively few cases die of simple peritonitis after the ordinary operation.

"The amount of mortality is not in the same ratio as the extent of the peritoneum and intestine exposed.

"Incisions made into peritoneum, with a view to relieve an inflamed condition of that membrane, are calculated to diminish, not augment, the inflammation.

"We may incise diseased with greater impunity, than healthy peritoneum.

"Rapid depression of the vital powers with death are not to be attributed to opening the sac. Similar cases are frequently seen, where operations are performed not implicating a serous membrane or a portion of bowel. They are to be met with, likewise, *after* division of the stricture external to the sac.

"The plan of scarifying the neck of the sac is extremely hazardous.

"The risk of wounding the intestine is less in the usual than in Petit's operation.

"The stricture should be divided before any attempts are made to draw the gut from under it; but after the division of the stricture, the gut should always be gently drawn down, and the constricted portion carefully examined, before it is returned into the cavity of the abdomen.

"Bleeding into the abdomen from wounded artery during the ordinary operation is not necessarily fatal.

"The cases of Lawrence, Breschet, Lallemand, and others, prove that the fear of bleeding in these operations is much exaggerated.

"Petit's operation not being applicable to all cases, exposes the patient to the danger attending error of selection.

"The sac should be opened, that we may thereby be enabled to judge of the condition of the intestine—whether healthy, ulcerated, or gangrenons; whether adhesions confine it to any part of the sac; the condition and disposition of the omentum, the number of protrusions, the condition and arrangement of the sac, whether double, single, or otherwise, and the seat of stricture.

"Unless the sac be opened, we are unable to pass a finger into the ring after the reduction of the gut, to ascertain whether adhesions exist in that situation, and which, unattended to, might nullify the success of the operation.

"In Petit's operation, mischief may accrue from returning fetid and decomposed fluid contained in the sac, into the cavity of the abdomen.

"On cutting through the superficial coverings of a hernia, their peculiar odour and appearance do not warrant the conclusion that the gut is in a gangrenous state.

"On the other hand, these signs may be wanting, and yet the intestine be found mortified.

"After performance of Petit's operation, we may have occasion, from the persistence of symptoms of strangulation, to open the sac, and thus two operations are performed; whereas, most frequently, one alone is necessary when accomplished by the usual method.

"The practice of exhibiting purgative medicines before operating for strangulated hernia, with a view to the liberation of the gut by its own movement, is improper.

"The operation has the best chance of a successful issue when undertaken early. The long-continued employment of the taxis diminishes that chance materially.

"The successful cases treated by Petit's operation would have been equally successful under the usual treatment; a very large number of those in which it failed might have been saved, had the sac been opened and the ordinary operation performed.

"If, when the patient is well under the influence of chloroform, the gut will not readily return into the abdomen, we may reasonably infer, that the existing constriction is too great to be overcome by ordinary means, and we ought at once to proceed to the operation.

"The employment of chloroform should supersede the necessity of warm bath, bleeding, and tobacco, in the treatment of strangulated hernia.

"The injurious effects of purgative medicines after the operation for strangulated hernia, are shown by the increased urgency of the symptoms, and the fatal results attendant upon their exhibition.

"Mild enemata are preferable, after the operation, to medicines given by the mouth; but these should only be employed after all symptoms of inflammation have subsided.

"A dose of laudanum should be given immediately after the operation, and repeated as often as occasion may require."—p. 91.

Bericht über die Leistungen in der Pathologie der Harn und männlichen Geschlechtsorgane. Von Dr. Sprengler, in Augsburg(*a*).

Report on the Contributions to the Pathology of the Urinary and Male Sexual Organs. By Dr. Sprengler of Augsburg.

On the Nature and Treatment of Diseases of the Kidney connected with Albuminous Urine. By G. Owen Rees, M.D., F.R.S., 8vo, pp. 134. London, Longman. 1850.

The Pathology of the Kidney in Scarlatina, illustrated by Cases. By James Miller, M. D. 8vo. pp. 177. London, T. and W. Boone. 1850.

Notwithstanding the length of time which has elapsed since the publication of the works reviewed in Dr. Sprengler's Report, we do not hesitate to bring under the notice of our readers some of the very important contributions to urinary pathology made by our continental brethren at the period that Johnson and Simon were conducting their investigations in England. It is to be regretted that the *Jaresbericht der Medicin* of Drs. Canstatt and Eisenman, which we must pronounce to be the most comprehensive and ably conducted publication of the kind that has hitherto emanated from any of the European schools, should be as yet comparatively little known in the British or Irish capitals, although its pages are enriched with the labours of Valentin, of Henle, of Vogel, of Gorup-Besanez, Loebel, and others whose names are illustrious in the annals of German medical literature. The retrospect of Dr. Sprengler is characterized by that patient and extensive research, and perspicuity in arrangement, so generally to be found in the writings of the German school. The contemporaneous publications on the subject of urinary disease which it notices are those of Aldridge, Johnson, and Simon, amongst the Irish and English, and amongst the continental those of Falck, Forget, Finger, and Norden. Of the latter class the observations of Finger, of

(*a*) From Canstatt's *Jaresbericht der Medecin*, for 1847. Erlangen, 1848.

Prague, on albuminous urine accompanying various forms of disease, are especially worthy of attention, as they have been conducted apparently with much care on a very extensive scale, and seem calculated to throw much light on questions connected with the "Law of Morbid Associations."

An examination of the urine was made incidentally in 600 cases, presenting fourteen varieties of pathological lesions, and the presence of albumen was ascertained in a much greater proportion than could have been at all anticipated; while in those instances in which a *post mortem* examination was made, the existence of degeneration of the kidney was by no means so general as to allow of its being assumed as the immediate cause of the abnormal condition of their secretion. In some of the cases, as will be seen, the presence of disease affecting organs in immediate relation with the urinary passages was sufficient to account for the existence of albumen. These results are presented in the following tabular view:

"1.	Of 186	cases	of Tuberculosis, the urine was albuminous in	46
2.	„ 88	„	Typhus, ...	29
3.	„ 46	„	Puerperal fever, ...	32
4.	„ 14	„	Carcinoma, ...	6
5.	„ 6	„	Chlorosis, ...	2
6.	„ 18	„	Acute rheumatism, ...	0
7.	„ 10	„	Intermittent fever, ...	1
8.	„ 33	„	Pneumonia, ...	15
9.	„ 14	„	Pleuritis, ...	2
10.	„ 6	„	Peritonitis, ...	2
11.	„ 16	„	Chronic pulmonary catarrh, ...	3
12.	„ 65	„	Intestinal catarrh, ...	8
13.	„ 18	„	Disease of the heart, ...	7
14.	„ 2	„	Epilepsy, ...	2

"Of the forty-six cases of tuberculosis with albuminous urine, thirty-five died, nearly all exhibiting cavities in the lungs and ulcerations of the intestines, and but two presented the kidneys affected with Bright's disease, although œdema existed in nineteen.

"In the twenty-nine cases of typhus, albumen showed itself in the urine, between the sixteenth and twenty-fifth days of the disease; of these, seventeen died; fifteen with typhoid ulceration of the intestines; in all, the kidneys were sound.

"In the cases of puerperal fever, the urine was altered principally by the lochia, or the secretion of *puerperal ulceration;* in six fatal cases, in which the urine exhibited evidence of the presence of albumen after the cessation of the lochia, purulent peritonitis was observed, but the kidneys were found intact.

"In the six fatal cases from cancer, ulcerated carcinoma was found affecting the uterus in four instances.

"Out of fifteen cases attacked with pneumonia, and presenting

albuminous urine, six died with the kidneys unaffected. In the remaining nine, the albumen gradually disappeared.

"Of eight affected with *catarrhus intestinalis*, three died, in whom ulceration of the mucous membrane of the intestinal canal was found.

In the foregoing cases the albumen was manifestly to be regarded as resulting from the passage of the products of inflammation or suppuration into the urine. When an inflamed or suppurating organ is not surrounded by impermeable walls, its contained fluids, whether lymph or pus, must be carried off from the body by the circulation and the collateral channels."

The observations here recorded must be considered of importance, as they, unquestionably, go far to prove that some other conditions besides special changes in the structure of the secerning organs are competent to produce derangements of secretion. What these conditions may be we have yet to learn; and to the practical physician no little additional source of embarrassment in arriving at an accurate diagnosis is presented, from the fact that the same effect may arise indifferently from any one of many causes. Thus in a case of albuminuria, how essential is it to form a correct opinion as to the cause of the deranged condition of the urinary secretion. Dr. Graves(*a*) has already called attention to this subject; and while his experience corroborates that of Finger, and his observations show that albuminous urine may exist independently of Bright's disease of the kidney, he has also proved that Bright's kidney may be unaccompanied by albuminous urine. The latter, though a possible occurrence, must, we think, be one of extreme rarity; though we have long been of opinion that the presence of albumen in the urine cannot be taken as a pathognomonic sign of lesion of the kidney(*b*). Indeed, in reference to the science of diagnosis generally, it may be stated that, in the present day, a *combination* of signs and symptoms is much more generally valued than the presence of any one phenomenon, however remarkable its characters may be.

The condition of the urine in diseases of an inflammatory type, accompanied by the deposit of lymph in special organs, is a subject of the greatest interest; and it is to be regretted that no observations calculated to throw much light on it have been conducted on an extensive scale. Indeed until the healthy condition of all the excretions, as well as the changes

(*a*) Clinical Medicine, by Neligan, vol. ii. pp. 264, *et seq.*

(*b*) Dr. Montgomery has drawn attention to the occurrence of anasarca of the hands and face in connexion with pregnancy, and has made the important observation, that it is often the forerunner of convulsions during the period of parturition.

produced in them during the continuance of diseased processes, be better studied, a great blank must exist in pathological science, and our knowledge of all the manifestations of any one special lesion can never be considered complete. Of the three great outlets for the elimination of effete products, as well normal as abnormal, namely, the tegumentary, the gastro-pulmonary, and the genito-urinary mucous surfaces, only the last can be said to have at all commanded the attention that it deserves; for, notwithstanding the researches of Liebig, we are in the present day pretty much at the same point of knowledge with regard to indications to be learned from the intestinal secretions as before the modern advances in organic chemistry had been made.

With regard to the connexion of albuminous urine with the existence of abscess, four cases are adduced by Finger, in which he entertains no doubt of the absorption of the matter, and its relation to the appearance of albumen in the urine. From the consideration of all these cases he is induced to believe, "that as in other blood diseases, so in Bright's, the blood is itself first diseased, and that, like other *dyskrasia* which may end fatally, it may lead to the formation of abnormal products [productbildung], namely, to degeneration of the kidney."

Some successful cases of the treatment of albuminuria with nitric acid, in doses of from two to four scruples, recorded by Forget, and a tabular view of seven very complete analyses of the urine made by Falck, in a case of albuminuria successfully treated in the Clinique of Professsor Heusinger of Marburg, conclude the portion of this retrospect devoted to the pathology of the kidney. The remainder is occupied by notices of works on the diseases of the bladder, testes, &c.

Dr. G. Owen Rees, the talented author of the well-known work on the analysis of the blood and urine, has favoured the profession with a small book on the nature and treatment of diseases of the kidney connected with albuminous urine. "The contents of this volume," he says, "may be regarded as a publication, in an extended form, of a few lectures delivered at Guy's Hospital." Notwithstanding the unpretending character of this announcement, we are disposed to regard the present essay as an important addition to the library of all interested in the study of urinary disease, as it presents, in a condensed form, the results of most of the investigations conducted of late by Johnson, Simon, and Gairdner, as well as some of the author's own views on the diseases of the kidney.

The first few pages, treating of the morbid anatomy of the

kidney, present us with Rayer's classification, the subdivisions of which the author adopts, "chiefly," as he says, "because by studying them the reader will become familiar with a great variety of morbid appearances observed in this disease, and so have his mind well prepared to enter upon the divisions of the subject, and the generalizations proposed by later writers; and not because I in any way agree in the propriety of the distinctions proposed by the author." The classifications of Dr. Christison and Rokitansky are also given; and the researches of Bowman, Johnson, Simon, and Gairdner into the microscopic anatomy of the organ, are detailed with briefness and perspicuity. In reference to the question of fatty degeneration, Dr. Rees says:

"I am by no means satisfied of the correctness of the analogy drawn between this fatty degeneration and that occurring in fatty liver, for the reason that, judging from the proportion of fat contained in such kidneys, they most decidedly assimilate rather to organs suffering from scrofulous deposit, than from the true fatty degeneration."

In connexion with this point three analyses of kidneys made by the author are detailed, by which it is shown how little dependence can be placed on examination by the eye alone, for out of two cases considered as fatty degeneration, and compared with the third, a healthy organ, though one was found to contain more fat than natural, yet the other exhibited a deficiency in this respect. While investigating the relation of fat found in the urine to the condition of the kidneys, the author had an opportunity of examining the kidneys in a case where ether detected the presence of fat in the urine during life; they were found indurated and somewhat contracted, infiltrated by a hard white deposit, "a diseased condition not uncommonly observed in persons of a gouty diathesis, of which the patient was the subject."

The conditions under which albumen may be found in the urine without the existence of Bright's disease, are next considered. According to Dr. Rees, albumen may be found in the urine,

"1st. During the last hours of life, it would appear that albumen is to be detected in the urine of persons dying from diseases quite unconnected with lesion of the kidneys.

"2nd. When any cause of obstruction exists to the passage of the blood through the great system of vessels in any part of its course.

"3rd. When blood exists in the urine.

"4th. When pus exists in the urine.

"5th. The presence of semen is sometimes a cause for the existence of albumen in the urine.

"6th. It is necessary to mention here, as part of the history of the subject, that the urine first passed by persons recovering from Asiatic cholera contains albumen."

The observations of Finger on this part of the subject become of great importance, when taken in connexion with the positions laid down by Dr. Rees, and deserve to be considered as an addition to our clinical knowledge of albuminuria.

Dyspepsia has been stated to cause albuminous urine, but this does not accord with our author's experience, as he has never seen albumen in the urine of such patients, nor in that passed after a full meal, or after the use of cheese, milk diet, or pastry, in all which intances the urine becomes clouded by heat, owing to the presence of phosphate of lime. The exhibition of mercury has also been charged with producing an albuminous condition of the urine, but in fifteen cases noted by Dr. Francis the urine was free from deposit on the application of the test by nitric acid. In the employment of this test several sources of error are pointed out, viz., the re-solution of albumen after a first or even second precipitation(*a*), the white deposit of lithates, and the *milky* precipitate in urine containing the resinoid matter of copaiba or cubebs.

Under the head, "Pathology of the Disease," the state of the blood and urine are fully considered. Some of the author's views on this subject merit particular attention, he says:

"The changes in the blood are not, however, confined to an alteration in the proportions of its natural ingredients; for even in early stages of this disease we find urea can be shown, by analysis, to exist in the diseased blood, accompanied by other proximate animal elements natural only to the urine. The most obvious, and probably the most important morbid change produced in the blood, consists, however, in the loss of its albumen."

The serum of the blood has, according to Dr. Rees, been found as low in specific gravity as 1018 or 1015. In the first periods, the proportion of red corpuscles is about the natural standard; and the fibrine, though it has occasionally been found in excess in the early stage, is not necessarily altered in quantity. With the continuing discharge of albumen the red corpuscles diminish in quantity, and the patient becomes anemic; though

(*a*) This arises from the fact that the resulting compound of nitric acid and albumen is soluble unless the acid is in excess; in applying the test, therefore, the nitric acid should be added in quantity equal to the specimen of urine examined.

the quantity of albumen in the urine may become less, and the serum of the blood regain its natural specific gravity, the fibrine is now occasionally in small excess. To explain the puffy and anemic appearance presented by those affected with Bright's disease, the following theory is advanced, based on three propositions, viz.:

"1st. In health the red corpuscle is supplied with nourishment by the chyle.

"2nd. The chyle is of lower specific gravity than the liquor sanguinis in which the corpuscles float.

"3rd. In the early stages of the Morbus Brightii, the specific gravity of the liquor sanguinis is greatly diminished.

"Now, in red blood of every kind, the corpuscles float in a liquor which is of the same density as the fluid contained within them. This is a necessary result of the physical law of endosmosis, because the blood-corpuscle is a membranous vesicle; and if its contained liquor were by chance to become, for a moment, specifically lighter or heavier than the fluid in which the vesicle floated, endosmodic currents would immediately be set in motion through the membrane, and the result of such changes would be the eventual acquirement of a condition of stasis, in which the fluid within and the fluid without the corpuscle would be found of the same specific gravity. Now, the liquor sanguinis in which the corpuscles float is of much higher specific gravity than the chyle; and when, therefore, that fluid comes in contact with the blood-corpuscles, as it enters the venous system, it meets with these vesicles, which contain a fluid of higher specific gravity than itself, and consequently a considerable quantity of this lighter fluid passes through the coats of the vesicle. This change, which appears necessary to the maintenance of the blood corpuscle (inasmuch as it is the manner in which iron enters to assist in the formation of hematosine) cannot occur to its normal extent if the specific gravity of the liquor sanguinis be lessened so as to approach that of the chyle, because in such a case there will be very little ferruginous matter passing into the corpuscle, and scarcely any at all if the liquor sanguinis be so degenerated as to be below the density of chyle. It is thus, then, on the fact of endosmodic change not occurring to its normal extent, that I believe we may fairly attribute the deficiency of red corpuscles in albuminuria, these important bodies not receiving their nutrition to the proper extent."

The analyses of Franz Simon are quoted as being in accordance with the statements advanced here, which in their present complete form are but a development of those originally put forward in the Gulstonian Lectures for 1845, and which were founded on experiments performed by the author in conjunction, as he informs us, with Mr. Samuel Lane. We have thought them worthy of being laid fully before our readers, as we feel

convinced that the study of physiological physics as conducted by Dutrochet, Matteuci, and others, is highly calculated to advance the cause of scientific medicine.

The changes which the urine undergoes are next considered, and we find that Dr. Rees' experience fully corroborates the observations of Graves, as to the fact that albumen may be absent from the urine, even in advanced stages of this disease. The author agrees with other observers, that in the latter stages the albumen may disappear for a period, or be present only in very small quantity, while in the early stages a large proportion, as much as five grains of albumen to the fluid ounce, may be found. From the examination of the urine in cases under his charge in Guy's Hospital, Dr. Rees is induced to believe that lithic acid may be absent altogether, and that when present its proportion is sometimes much diminished; while, on the other hand, he has known the urine to exhibit a crystalline deposit of lithic acid; and even occasionally, when alkaline, the triple phosphate was discovered in excess. Some remarkable instances of deficiency of urea are next alluded to.

The symptoms and diagnosis of this important lesion merit particular attention, and while we have much to learn before we shall be in a position to discriminate between its several forms, many advances have been made towards our knowledge of its clinical characters. The following observations present us with a succinct account of the more prominent features:

"The acute symptoms observed at the commencement of albuminuria, or during its progress, are as follows:—Febrile heat, pain in the head, dry skin, thirst, loss of appetite, urine scanty and albuminous, frequent desire to pass urine, pain in the loins and lower extremities, urine occasionally bloody; nausea is very often felt, and vomiting sometimes occurs. These symptoms may continue for several days without any œdema being observed. It seldom happens, however, that more than six-and-thirty or forty-eight hours pass without dropsical swelling attracting attention. As regards œdema, it is worthy of attention that we may frequently have the eye-lids and face swelled without any such condition of the trunk or extremities. This swelling of the face alone is a peculiarity which often serves as a guide to the true nature of the case, when the other general symptoms characteristic of the disease are but imperfectly developed. If the acute symptoms above described are not engrafted on any old disease of the kidneys, and receive timely and proper treatment, the patient may completely recover; the albumen no longer exists in the urine, and the disease may never return. Every one, at least, who has seen much of albuminuria, must be aware of cases which have occurred in persons from whom the disease has passed away, and who have enjoyed uninterrupted health for years.

Dr. Bright (even at an early date in the history of his discoveries) was well aware of this; and I am particularly anxious to draw attention to the point, inasmuch as there appears to have been some misapprehension on the subject among the profession.

"If, instead of the above-described fortunate result being brought about, the case goes on, and the chronic form of the disease be established, our patient must be regarded as the subject of one of the most severe and fatal maladies with which human nature can be afflicted. Unfortunately, in the great majority of patients who come under our notice, suffering acute symptoms, we find this to be the case, and for the reason that the greater number we meet with are really the subjects of old and insidious disease, upon which the acute symptoms have been engrafted."

In reference to the chronic form the symptoms which characterise the disease are much the same as those observed in the acute:

"They are, however," as the author remarks, "much less severe, and often trouble the patient so little as to be neglected. The patient complains of general uneasiness, dyspeptic symptoms, nausea, and perhaps occasional vomiting; the urine is passed frequently, while the face is pallid, and perhaps slightly œdematous under the eyes."

Cases of debility with tendency to nausea, anemiated aspect combined with puffiness under the eye-lids, and a peculiar swelling of the wrists and fore-arm, which are indurated but not anasarcous, are considered by our author as important indications which should at once call attention to the urinary secretion.

The connexion between anasarca and degeneration of the kidney, as its cause, Dr. Rees looks upon to be even more frequent than is generally supposed. Dr. Christison is of opinion that at least three-fourths of all the cases of anasarca met with are so caused; but even this large proportion is regarded by our author as less than what really exists; while the occurrence of ascites, pleuritic effusions, and diarrhœa, is considered by him as the result of the general tendency to effusion. In reference to the affections of the brain, which form such important complications of this disease, and which have been by many referred to the presence of urea in the blood, the following observations merit attention:

"For my own part," says the author, "I am greatly inclined to believe that we must look to other causes than the poisoning of the brain by urea, for the comatose symptoms and convulsions observed in this disease. It happened to me not long ago to examine the blood of a patient who had his senses about him to the last mo-

ment of his life, and whose blood was more impregnated with urea than that of any case of Bright's disease that ever came under my notice. He eventually sank; and it was found that no kidney existed on one side, and that the large complementary organ had its ureter obstructed by a calculus. Now here was complete suppression, the blood loaded with urea, and no comatose symptoms. I think it right to mention these difficulties in arriving at an opinion, though I cannot assist the inquirer to the truth: before leaving the subject, however, I would suggest that it may, perhaps, be found hereafter that a certain tenuity of the blood must exist in connexion with the presence of urea in that fluid before the conditions above noticed can be brought about."

This is certainly a very important as well as obscure question, and one the solution of which must, we think, be sought for in the department of pathological chemistry, rather than in any other. The result of accumulated observations would seem to show that in some instances the presence of urea in the blood must be considered as the sole cause of the coma, convulsions, and other symptoms referrible to the nervous centres, as no special anatomical change has been observed after death; while, as in the case just cited by Dr. Rees, a large quantity of urea in the circulation appears to have been, in many instances, unproductive of poisonous effects. These discrepancies can be only explained by supposing that the body ordinarily known as urea is capable of existing in very different states, or, what is more probable still, that there exist several ureas, some possessed of poisonous qualities, and others whose action on the nervous centres is inert. The latter view is rendered highly probable by the results arrived at by M. Wurtz, Professeur Agrégé à l'Ecole de Médecine de Paris, who, in following out the theory of MM. Dumas and Laurent on the "substitution of atoms," has placed it beyond doubt that many bodies exist possessing the general properties of ammonia, which yet differ in chemical constitution, and possess distinctive characteristics; and that it is highly probable that many different ureas also exist, has been shown by the same author. The new ammonias(*a*) of M. Wurtz exhibit the remarkable

(*a*) Some interesting observations on the new ammonias were laid before the Dublin Pathological Society, at one of its recent meetings, by Mr. William K. Sullivan, chemist to the Museum of Irish Industry and to the Royal Agricultural Society of Ireland. Mr. Sullivan has observed that in the breaking up of the constituents of the brain during the process of putrefaction, a large quantity of valerianic acid is produced, and at the same time ammonia, but an ammonia in which part of the hydrogen is replaced by a carbo-hydrogen: in this instance valyle, the carbo-hydrogen of valerianic acid, was the one which had been substituted. Mr. Sullivan is further of opinion that such bodies may occur in the animal organism also, and that their ureas (that is,

property of supporting combustion; and it remains to be proved that of the several ureas some may possess poisonous qualities, while others are inert. It is, therefore, in a high degree probable that an accurate series of chemical investigations into the condition of the blood and urine in Bright's disease will yet throw much light on these important questions. If we reject the doctrine of poisoning to account for coma and convulsions in certain cases not presenting any appreciable pathological change, we must fall back on the unsatisfactory explanations of death being caused by "tenuity of the blood, in connexion with the presence of urea," or "a peculiar pathological state of the brain unattended with effusion, and showing no appreciable lesion on *post-mortem* examination," the only theories which, according to Dr. Rees, can be offered for many such cases. Dr. Miller is of opinion that the poison of urea has a particular action on the muscular system. He says:

"Many cases of the acute and chronic malady I have observed to terminate by gradual or sudden failure of the heart's strength, death being brought about solely in this way. Some few have been so rapid in their progress, especially those in which the vascular system has not been relieved by dropsy, as to lead me to suspect that this principle acted as a special poison on the heart itself."

The affections of the heart, liver, and lungs, which accompany this disease, are next considered, but though ably treated, nothing of a novel character has been added by the author. In reference to the pulse, from which, no doubt, many valuable indications may be obtained, we cannot but think that too high a degree of importance has been attached to a peculiar character of pulse, which is described as "hard and wiry, giving at once an impression that the vessel beneath the finger is less elastic than in health." This condition he considers as owing to a roughening of the lining membrane by atheromatous or earthy matter, and if observed in connexion with pallor of countenance, he says, "we shall seldom be far wrong in predicting that the urine will be found albuminous, and the patient the subject of confirmed kidney disease."

A brief section is devoted to the consideration of *the kidney affection following scarlatina*, which the author regards as identical in character with those other affections of the organ which are accompanied by albuminous urine.

Some judicious observations on the treatment of albumi-

combinations having the same relation to these ammonias that ordinary urea has to the ordinary ammonia) will be found of frequent occurrence in abnormal conditions of the blood and urine.

nuria merit attentive perusal; the leading indications, not only for combating the affection generally, but for the successful treatment of its several complications, being pointed out with much perspicuity and judgment.

In the acute form, though we are occasionally justified in having recourse to active depletory measures, Dr. Rees warns us against the mischief which may be done by inducing that watery condition of the blood which it is the very tendency of the disease to produce. If the symptoms be indicative of an acute and first attack, we may proceed with more boldness than in a case where they supervene on old disease. The usual practice of cupping over the loins meets with our author's approval, but he is of opinion that the quantity of blood taken should not be too large, while this measure should be combined in most instances with saline purgatives, the vapour-bath, and antimonials. Should inflammatory complications of the thoracic viscera, or other important organs, be present, the lancet may be had recourse to, but its effect must be carefully watched.

In regard to mercury, Dr. Rees says that he can assert with confidence that there is little to hope from it, as it does not appear to exercise its usual action, cases of the morbus Brightii too often exhibiting a great facility to the occurrence of profuse salivation from small doses. Even in the inflammatory complications, the author prefers antimony, in increasing doses, to mercury. The diuretic action of digitalis may be of service in cases of anasarca or ascites, in the proportion of from five to ten minims of the tincture to twenty or thirty minims of antimonial wine and two drachms or half an ounce of the water of the acetate of ammonia, a combination proposed by the author. Opium, in doses of from half a grain to a grain, combined with antimony or ipecacuanha, he also considers advantageous, when inflammatory symptoms run high ; but whenever we find antimony answer the desired end, it appears to deserve the preference.

In the chronic form he thinks much advantage may be derived from the use of iron, the best form being the compound iron mixture. Should the stomach, however, not bear this, we may try some of the more palatable preparations, as, for instance, the wine of iron, or the ammonio-citrate or ammonio-tartrate of iron, which may be exhibited in the infusion of calumba. Elaterium is also spoken of highly, especially as an adjunct to the iron. The hot air bath is also recommended, an expeditious plan of applying which deserves notice. A tube, which serves as the chimney to a spirit lamp, is introduced

under the bed-clothes, and the supply of hot and dry air soon causes a profuse perspiration. This is a method which we have been in the habit of using for many years, and we can speak most strongly of its efficacy.

In chronic cases Dr. Rees considers the great indications to be, "first, the relieving the blood of its superfluous water; and, secondly, supplying it with iron, to assist in the production of red corpuscles." Counter-irritation, in the form of seton or issue, is also strongly recommended, which the author says he has known, when worn in the loins, for months, and even years, to have kept the disease at bay.

When the distension of the areolar tissue from anasarca is such as to become painful, puncturing the skin has been practised with benefit. The ingenious method of Dr. Babington is cited by the author: "It consists in introducing the lancet several times by the same opening made through the skin, and each time varying the direction of the point. In this way we succeed in opening a large number of cells, while we wound the skin in one place only." The apoplexy which is generally, as the author says, of the serous character, he considers to be best relieved by purging, derivative enemata, and counter-irritation at the back of the neck.

An appendix is added to the work, comprising extracts from the author's Gulstonian lectures for 1845. We earnestly recommend them to all interested in the scientific investigation of this important lesion, as they contain much valuable information on the physical characters of the blood, the influence on it of the laws of endosmosis, and its relation to the several changes occurring in the disease. From a consideration of the changes effected in the blood-corpuscle by the processes of endosmosis and exosmosis, the author considers it as fully established that this minute body possesses a vesicular structure, that the vesicle or membrane is white, enclosing between its inner surface and the surface of the nucleus, a fluid of a red colour, namely, the hematosine, whose existence in human blood-corpuscles (a point much disputed by physiologists) he also thinks has been fully proven. The error into which the majority of chemists has fallen in respect to these corpuscles is forcibly dwelt on, as it is shown that in most instances they were regarded as consisting entirely of hematosine, whereas they are really organized structures; hence the necessity of obtaining the red-coloured fluid free from its albuminous envelope before we proceed to estimate the quantity of hematosine.

An expedient of great ingenuity has been adopted by the author for this purpose, which consists in first obtaining the

corpuscles free from serum, by receiving the blood into a solution of salt and water or sugar and water (of the specific gravity of the liquor sanguinis), and when the corpuscles have subsided in this solution, and the supernatant fluid has been poured off, they are to be placed in a vessel of distilled water, by the rapid endosmosis of which their envelopes become broken, their nuclei liberated, and the colouring matter dissolved. From this mixture, when set aside, a white stratum of broken envelopes and nuclei subsides, leaving the supernatant fluid of a bright red colour, and containing, in the opinion of the author, every portion of the iron, none of which he believes to reside in the envelope or nucleus. Several other interesting observations, which well merit the consideration of scientific pathologists, will be found in this appendix.

The author's process for the estimation of urea in the animal fluids, which is next detailed, has the merit of avoiding many sources of error, the greatest of which he considers to arise from the relation of urea to ozmazome, as regards solubility in different menstrua. He says there is every reason to think that, when nitrate of urea crystallizes from extractive matter, its weight is much increased by the adherence of ozmazome, and he proposes an excellent method for the separation of these substances. The concluding pages of this little book are occupied with the question of albuminous urine in connexion with pregnancy. We believe attention was first directed to this important subject by the observations of Professor Montgomery(*a*) on the occurrence of anasarca of the hands and face during the period of gestation, and its being often the forerunner of convulsions during parturition. In the opinion of Dr. Rees, it is to the late Mr. Tweedie, of Guy's Hospital, that we are indebted for the knowledge of the fact that the urine is often albuminous during utero-gestation; while the researches of Dr. Lever have further elucidated the subject. From the combined observations of several writers, it would appear that women, who are the subjects of puerperal convulsions, always pass albuminous urine; and this, Dr. Rees is of opinion, may occur without renal degeneration. The researches of M. Blot(*b*) lead to the conclusion that albuminuria must be considered as a sign which should make us apprehensive of convulsions during parturition, though they do not necessarily occur in all cases in which this abnormal condition of the urine exists.

While Dr. Rees has given but a very brief section to the consideration of the kidney affection of scarlatina, we find that

(*a*) Exposition of the Signs and Symptoms of Pregnancy, p. 5.
(*b*) See *Gazette Médicale de Paris*, No. 9, 2 Mars, 1850.

the work of Dr. Miller is almost exclusively devoted to this special department of the subject, comprising, as it does, the result of his observations on the epidemic of 1848, for the study of which he appears to have enjoyed ample opportunities in his capacity of physician to the Western General Dispensary. The subject matter of Dr. Miller's work was first submitted to the profession, as he informs us, in a short paper read before the Medico-Chirurgical Society of London, and subsequently published in the Lancet, in February, 1849. After some general considerations on dropsy, the author proceeds to enumerate the symptoms which he considers most characteristic of "scarlatinal congestion of the kidney." "The main feature," he says, "of the acute general dropsy of scarlet fever, is the sudden occurrence of *anemia*, a circumstance owing to the arrest of the depurating function of the kidneys, and certain important changes induced in the physical and chemical qualities of the blood. Superadded to dropsy, it imparts the well-known condition *leuco-phlegmasia*."

Again:

"These anemia and anasarca are ushered in by fever of an inflammatory type, of greater or less intensity. After a very obvious *malaise*, of no definite duration, sometimes dating from the disappearance of a scarlatina rash, a rigor occurs, often attended with cephalalgia and vomiting. The rigor, amounting in many cases to a mere chilliness, is more rarely exalted into a paroxysm of general convulsions, especially in young children. The functions of the sensorium may be much disturbed from the first accession of the fever, and active delirium, dilated pupils, with partial or complete insensibility, may take the lead. The pulse, under these circumstances, is often very slow; but on the occurrence of reaction without head symptoms, it is frequent and hard; the breathing is accelerated; the heart's movements are tumultuous. We are generally led, from the first, to auscult the chest, and not unfrequently surprised to find the physical signs of thoracic inflammation absent. The first stage of pneumonia, a roughness with the first sound of the heart, or signs of inflammation of one or more of the serous cavities of the chest, may, however, at this period, be detected. The abdomen, generally complained of, is now tender on pressure; the patient is intolerant of manipulation about the loins, hypogastria, and umbilicus, and often has peritonitis been suspected where the kidney was solely the seat of disorder. Simultaneously is the urine frequently suppressed or very scanty, the patient passing for many hours only a few bloody drops. I have observed not more than an ounce passed for three days in succession. Under these circumstances even, the fluid is rarely above the normal density, and varies much in its degree of coagulability. In rare instances the albumen is ab-

sent from the urine from first to last, or only discoverable towards the close of the disorder, when the patient is considered convalescent."

This forms a tolerably perfect *resumé* of the most important general symptoms, which deserve the very highest consideration, as, in our attempts to combat so very formidable a disease, the earliest indications are ever the most valuable. In reference to *albuminuria*, usually considered essential to confirm the diagnosis of this affection, Dr. Miller would seem to think that in certain cases this symptom may be absent from "first to last," and that the combination of anemia and dropsy, with the other general symptoms just enumerated, may be considered to a certain extent significant of renal disturbance, though at page 10 we find it stated that—

"Almost coetaneous with the general dropsy, the urine is found coagulable, and the slightest febrile movement during suspected convalescence from a scarlatina-rash, at any period of the desquamation process is a signal to institute an examination of this secretion."

In combating Dr. Graves' views as to the nature of the dropsy occurring after scarlatina, our author appears to have fallen into error on two points, as he states that Dr. Graves considers the kidney unaffected in scarlatinal dropsy, an induction which cannot be fairly made from any observations in the "Clinical Medicine." The following passage exhibits Dr. Graves' views on this subject:—"The boy's urine was remarkably albuminous, and of the specific gravity of 1027. This is a point worthy of remark. In many cases of dropsy after scarlatina, the urine is albuminous. Now, almost every case of this kind will get well, and as convalescence progresses the urine ceases to be albuminous. These facts, of the truth of which I can speak with confidence, are quite sufficient to show that those persons are wrong who assert that albuminous urine is always the result of organic disease of the kidneys." After some further observations, Dr. Graves goes on to say:—"This case went on unfavourably, the boy died, and the kidneys were found in every respect healthy"(*a*). This fact alone would be sufficient to show the fallacy of Dr. Miller's opinion, when he says:

"I am inclined to differ *in toto* from this eminent writer, believing that true albuminuria is invariably significant of an acute or chronic lesion of the kidney, obstructing the general circulation, and impairing at the same time its elementary function."

(*a*) Clinical Medicine, by Neligan, vol. i. p. 350.

But the observations of Finger and others, already quoted, have placed it beyond doubt that albumen may exist in the urine independently of lesion of the kidney. As to the period of the disease at which dropsy usually occurs in cases of scarlatina, and as to whether it deserves to be ranked amongst the primary or the secondary affections, some of Dr. Miller's investigations are very valuable. He says: "Many of the facts contained in the cases given in the sequel tend to show that it does result from a primary or direct action of the poison of scarlatina upon the kidney itself; while others further indicate the necessity of considering it as occasionally constituting a distinct form of scarlatina." The enunciation of this important proposition is followed by some general deductions from the writings of Williams and Gregory, while the author's own immediate proofs are, by a singular want of judgment in the mechanical arrangements of the book, transferred to the third chapter, whither we are obliged to follow him, passing over the intervening second chapter, which is devoted to the "Anatomical Appearances," and which, beyond some observations on secondary inflammations arising from urea existing in the blood, and the absence of rigor mortis, contains little of interest.

The third chapter, comprising "Pathology and general Conclusions," presents us with a summary of the author's cases, from which it appears that—

"Out of 219 cases of scarlatina, 119 were examples of *scarlatina simplex*, one of which died during an attack of pneumonia supervening to the eruptive period, none having presented any manifest renal symptom; 21 were cases of anginose scarlatina, of which 11 died; the latter were chiefly infants; 10 were cases of true *scarlatina maligna*, of which number 9 died; and of the 69 dropsical cases 8 died. Of 72 cases out of 6 given as illustrative of the renal symptoms, 6 occurred in a sub-acute form, between the termination of the first month, dating from the decline of the eruption, and the sixth week; 16 during the third week, of which 12 commenced on the fourteenth day, and 4 on or about the twelfth day; of 10 cases occurring in the first week, 5 had their commencement on the seventh day; and in 3 the symptoms of renal disturbance were unequivocally shown during the period of eruptive and scarlatinal angina."

It will be seen that more than half of these cases (119 out of 219) presented no manifest renal symptoms; yet the author proceeds to make deductions from the writings and definitions of Cullen, Plenciz, and Williams, by which he endeavours to prove the essentiality of the dropsical affection to scarlatina; a view which we cannot but consider as untenable, at the same time that we fully recognise the importance and frequency of

the renal complication, which we look upon as bearing the same relation to scarlet fever as the secondary inflammations of other organs, so often observed in the same disease. While the experience of Dr. Williams induces him to fix the twenty-second or twenty-third day as that on which the dropsical symptoms most usually supervene, it will be observed that, in the cases recorded by our author, renal symptoms were manifested as early as the fourteenth day by twelve; and in five these symptoms presented themselves on the seventh day, while three showed evidence of renal disturbance during the very period of eruption.

The term *renal scarlatina*, or *scarlatina of the kidneys*, is applied by Dr. Miller to that class of cases in which, after prolonged exposure to the poison of the disease, the *first* specific actions of scarlatina are not manifested; at least eight such cases will be found amongst those recorded by the author in which the eruption was absent, but which presented albuminuria and anasarca at variable periods after exposure to contagion.

A remarkable example of this form of the disease is given by Dr. Graves, which he says "appears to prove the fact, that in some instances diseases produced by contagion do not give rise to the whole train of phenomena by which they are ordinarily characterized"(*a*), an explanation which we must confess seems to us more satisfactory than that of Dr. Miller, who, dissatisfied with the term "latent scarlatina," used by authors to designate this form of the disease, would lead us to imagine that a special scarlatina of the kidneys exists. Our general complex idea of disease resulting from the combinations of many single phenomena, we are not warranted in concluding from the absence of one, two, or even more, that we have to deal with a separate and distinct affection. To the general proposition of the author, "that the skin, throat, and kidneys are the proper recipients of the poison of scarlatina, the symptoms of affection of each being only prominently marked in those cases, with the exception of the skin, in which the poison acts with a certain degree of intensity," we give a ready assent, indeed we feel much pleasure in recommending the entire of this chapter to the reader, as one which contains much valuable matter, though highly imbued with the peculiar tenets of the writer. It is concluded with some brief and interesting remarks on the history of the several great epidemics which have been illustrated by the pens of such master-minds as Sydenham, Morton, Fothergill, Plenciz, and Hamilton, from which it is seen, that while in the writings of Sydenham scarlatina is described as no other than a skin affec-

(*a*) *Op. cit.*, vol. i. p. 347.

tion, the disease is delineated at an earlier period by Morton, much as it occurs at the present day.

The fourth and last chapter presents us with the author's views on the treatment of this important affection, but beyond a consideration of the general indications, and the careful use of blood-letting, warm baths, purgatives, diaphoretics, and diuretics, nothing of any great novelty or interest is put forward.

The details of seventy-five cases, presenting many features of great importance, conclude the work. The records will be found in many instances copious, and for the manner of inserting and printing them, the author informs us he has followed the example shown by Dr. Christison in his work on Granular Degeneration of the Kidneys.

The amount of attention bestowed on this important department of pathology in the different European schools of late years, as evidenced by the number and rapid succession of works on the subject, promises at no distant period to place it amongst the most highly cultivated and best illustrated of all the branches of practical medicine. The union of the hands of many labourers in the field of science makes light the most comprehensive works; and, from the combined observations of the chemist, the histologist, and the clinical physician, singularly rapid advances are being made in the pathology of urinary disease. To the clinical observers of the Irish School of Medicine we would earnestly recommend this interesting and important department; few others can be found in which their names are not ranked with those of the most original and industrious contributors.

Sketches of the Medical Topography, and Native Diseases of the Gulf of Guinea, Western Africa. By WILLIAM F. DANIELL, M. D., Assistant Surgeon to the Forces. London, Highley. 1849. 8vo. pp. 200.

AN investigation into the causation of disease, particularly in climates remarkable for their insalubrity, is a subject of vast importance, and of great interest to the medical inquirer. Although capable of living in every portion of the globe, there are yet certain regions the lethal influence of which the white man has hitherto been unable to overcome or to prevent. Of no part of the world is this more true than of the western coast of Africa; known to Europeans for nearly 300 years as a settlement, yet how slightly has the mortality there decreased, to how small an extent has the number of victims diminished,

which, year after year, fall a prey to the deadly influence of that portion of the earth, but too truly named the "White Man's Grave"! In the present day this inquiry is one of special interest; the slave trade is now so far abolished that commercial enterprise is daily more and more directed to the obtaining of those products which are yielded by the almost unexplored and unknown regions of this coast. Dr. Daniell's work can be scarcely termed a purely medical publication, yet it affords us most valuable information, in an attractive form, on the topography, climate, habits, and diseases of the natives, with cursory observations on the affections to which white settlers are liable; indeed, he himself puts it forth as preparatory to a future work on the pathology of the febrile affections of tropical Africa. In his introductory observations he refers to the papers on the fevers of Gambia and Sierra Leone, published by Mr. Boyle and Dr. Burton, and to the Medical Reports of the Niger Expedition; but he does not seem to be acquainted with the valuable essay of Dr. Kehoe, published in the sixth volume of our new series, and in which that physician puts forth views, as regards the use of remedies directed to the surface of the body, remarkably coincident with his own.

The present volume is confined to a description of the equatorial region of the Gulf of Guinea, the especial slave district. He divides it into four parts, the two first of which are devoted to those regions bordering on the Bights, or Bays, of Benin and Biafra, and the two latter to the larger islands of the group scattered over the southern seas of this region. The Bight of Benin is the commencement of the Slave Coast. It is, in nearly its entire extent, 360 miles, an almost interminable forest swamp, traversed by small rivers and creeks. The sea-coast, covered with decaying vegetable matter, continually exhales a peculiar offensive odour, perceptible at sea at a distance of even several miles, and the very sea water is impregnated with its noisome gas; consequently the sailors in vessels lying off the shore are frequently affected with diseases similar to those which attack the white settlers on land. The author first gives an interesting geographical description of the towns and river settlements on this coast, together with an account of the vegetable productions of it; and having given a short history of the inhabitants, as far as he was able to obtain authentic facts, proceeds to speak of some of the singular customs, evidently dependent on religious tradition, which are still prevalent amongst them. Of these, the most singular are the general customs of circumcision in the male, and of excision in the female.

"The excisive process," writes Dr. Daniell, "is not restricted to one particular part, but is more or less varied in conformity with the usages of the different countries in which it is promoted. Under these modifications it may be classed under four heads, viz.—1, simple excision of the clitoris; 2, excision of the nymphæ; 3, excision of both nymphæ and clitoris; 4, excision of a portion of the labia pudendi, with either or all of the preceding structures."—p. 27.

"The first, and least objectionable of these operations, is the one almost universally selected by those nations where such curious customs are permitted. It is, fortunately, not accompanied by any dangerous symptoms, a moderate febrile irritation, with painful tenderness and profuse suppuration, being the common termination. Whenever a lack of skill or manual dexterity prevails on the part of the operator, it assumes a more serious aspect, violent inflammation and sloughing of the circumjacent textures frequently supervening. This process is mostly carried into effect before puberty, but the age of the person is no obstacle to its completion, should such be thought necessary. In Ebo, Old Callebar, and other parts of Western Africa, it occurs between the years of four and nine; much, however, will depend in these cases on the locality, and the purpose for which it is intended. When in Callebar river, I had an opportunity of witnessing the mode of operation undertaken there, as elsewhere, by aged females. The girl having been placed on the knees of a woman, with the legs apart, the clitoris was diligently sought out (for in this, as in other subjects of tender age, from imperfect development, it was sometimes difficult of detection), and upon discovery was seized, forceps-like, by two pieces of bamboo, or palm sticks, gently drawn forth, and severed by means of a sharp razor. The hemorrhage was rather copious, but it was suffered to exhaust itself. Afterwards the parts were alternately bathed with warm and cold water, and the girl placed in the recumbent position. The surface of the body was then dotted over by some fetish preparation, to avoid the molestations of any malign influence, and in two or three days the little invalied was restored to her usual occupations. The clitoris here is termed Yientra, and its continuance in females approaching maturity is not unfrequently deemed a cause of reproach. This peculiar observance is popular in various parts of Arabia, Darfour, Kordofan, and among the Galla tribes of Abyssinia; also in several of the kingdoms of Soudan, in the Foulah and Mandingo countries, and in the Ebo's of the Quorra, and the populations of those rivers connected with them.

"The second division, or removal of the nymphæ alone, is rarely attempted on the same grounds as the previous operation: it is resorted to more as a surgical measure in those morbid states where the structure is the seat of hypertrophy or fungoid enlargement, and to which negro females are liable, either from exces-

sive indulgence in venery, or from constitutional predisposition."—pp. 29-31.

"The excision of these organs in conjunction with the clitoris, though rather less common, is maintained in many of the countries where similar ordinances are instituted and upheld. In general it is effected at the desire of the woman herself, either in complaisance to the hereditary customs of the family to which she belongs, or to the arbitrary caprices of her superiors, and as a means of ingratiation into the favour of her liege master, who may allude to its consummation as a proof of her devotion to his wishes; not that this latter event is dependent on her option, for in the African code of domestic regulations it is freely understood that the hints of a husband are tantamount to law. Social life, in most of the Pagan towns of Western Africa, is darkened by scenes of the grossest demoralization, and its annals teem with pictures of such a licentious and depraved character, that a narrative of them would scarcely command credibility. An illicit and promiscuous sexual intercourse is constantly carried on by nearly all classes of slave subjects, who, not fettered by any moral obligations, and solely intent on the gratification of their passions, give them an unrestrained rein long before the age of puberty. In the younger branches of families more immediately under the supervision of their chiefs, any dereliction from an established probation of chastity in these respects is punished with fearful severity, both in boys and girls, especially if any of the latter is a favourite domestic or near relative, since the license is only justifiably allowed in individuals who have attained a proper maturity. The evil effects of this immorality, however, are sensibly felt by those persons who are accustomed to procure and retail them (i. e. the female slaves), in the light of a commodity for traffic. Slave merchants of the interior, when they, therefore, visit the marts for the selection of young females, are amply aware of the laxity of frame and physical deterioration that ensue from the premature development of form in these cases; and, by a careful series of manipulations over various portions of the body, determine how far they may venture on the price, should the vender not guarantee their virginity. In spite of the most stringent precautions, a clandestine intercourse is more or less prevalent among the sexes, from the opportune temptations afforded them; therefore, for the prevention of these delinquencies, the cruel and painful process (the concluding division) is had recourse to.

"Dr. Brown, who resided some time in Darfour, North Africa, has given the first account of this operation. He remarks that the clitoris is cut off at the age of eight or nine years, and the term employed for denoting the performance is خفض *Chafadh*, while the appellation conferred on the person who operates is that of خفاضة *Chafadhah*. The object of the first excision is for the purpose of 'producing an artificial impediment in the vagina, to prevent sex-

ual intercourse, in order not to impair the value of the slaves. This operation, like the former, is performed at all ages, from eight to sixteen, but commonly from eleven to twelve. * * * The operation was performed by a woman, and some of them complained much of the pain both at and after it: they were prevented from locomotion, but permitted to eat meat. The parts were washed every twelve hours with warm water, which profuse perspiration rendered necessary. At the end of eight days, the greater part (of those operated upon) were in a condition to walk; and, liberated from their confinement, three or four of them remained under restraint till the thirteenth day.' Dr. Brown, however, does not appear to have thoroughly understood the details of this operation, inasmuch as they are two distinct operations, performed in many countries at different intervals, and the solitary excision of the clitoris is no obstacle to copulation, unless some of the adjoining textures have been removed with it."—pp. 32–34.

"In some of the countries of Western Africa, another and more inhuman barbarity is perpetrated on girls of high birth, who have been guilty of prostitution, and is often succeeded either by a partial agglutination of the vaginal membranes, or a permanent obliteration of the canal. It consists in the introduction into the vagina of unripe pods of the *capsicum fructescens*, or bird-pepper, beaten into a soft mass, so that from its acrid principle a greater amount of suffering may be inflicted, in order to deter the fair debauchee from committing any further excesses. The pain from the active inflammation thus induced is of the most severe character. I was informed by one of the principal inhabitants of the comparatively civilized town of Clarence, Fernando Po, that this course of punishment is now and then had recourse to, to check any similar irregularities on the part of the female.

"During my stay in those Pagan towns where female circumcision is supported, I have frequently attempted to procure information of its early origin, but without success; the invariable answer to my queries was, that it had been transmitted to them from their forefathers, and further than this they know not. Some chiefs, indeed, have told me that it was intended to do away with those criminal liaisons which are apt to occur where a number of females are congregated under the roof of one man. I am, however, very sceptical as to the truth of this explanation, although it may be admitted as one of the causes of its present toleration."—p. 35.

The diseases to which the inhabitants of this portion of the coast are subject differ but little from those of the other regions afterwards described. In low situations, as in the maritime towns and villages, they usually assume a more asthenic type than in the prædial and elevated inland districts. Cutaneous diseases in various forms are very common, as lepra, psoriasis, scabies, frambœsia, &c.; but syphilis seems to be the most frequent and fatal of all the diseases to which the male population

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is liable, predominating among them more than among the females. Dr. Daniell states that cases of gonorrhœa, foul and malignant phagedenic ulcers, nodes, and other sequelæ of syphilis, not unfrequently resist the most energetic and judicious treatment of the European surgeon. Small-pox occurs occasionally after long periods, generally of a peculiar malignant type, and invariably sweeping off two-thirds of the inhabitants of those villages exposed to its visitations. Pleuritis, pneumonia, consumption, and other diseases of the lungs, are frequent during the cold rainy months, during which period also dysentery, diarrhœa, and other disorders of the abdominal viscera, are common. Intestinal worms, of which the tape-worm and ascarides are the most general, are productive of much suffering among the women and inferior class of slaves; but the author states that of late years the introduction and plentiful supply of European salt has somewhat diminished their occurrence. Cerebral diseases and maniacal affections are uncommon.

These are the principal maladies, if we except chronic ulcers of the leg, and occasional elephantiasis, to which the natives of the Rio Formosa and Slave Coast are subject. If we contrast with them the diseases which cause such a sacrifice of life amongst the white traders in this portion of Western Africa, we cannot but be at once struck with the truth of the observation of Dr. Graves, "that a proper attention to the physical and mental qualities of the varieties of the human race would soon make known what region of the earth each is peculiarly fitted to inhabit"(*a*). For the mortality amongst the whites seems to be altogether due to "a class of insidious febrile diseases, particularly the remittent fevers, whose adynamic type, rapid career, and other pathological features, differing so greatly from those of other tropical climes, sufficiently stamp it with that odious celebrity now vividly diffused and too justly merited." When Dr. Daniell visited the Rio Formosa in 1839, he found two vessels moored a short distance from its mouth, one of which, within the space of five months, had buried two entire crews, a solitary person alone surviving; and the other, which had entered at a much later period, had lost one-half its men, while the remainder were incapable of undertaking any active or laborious duty. The ship to which he was himself attached became so unhealthy, that after some weeks they lost one-third, out of a compliment of eighteen men. In truth, the old slave doggrel rhyme is yet but too true:

> "Beware and take care of the Bight of Benin,
> For if one comes out, twenty stay in."

(*a*) Clinical Lectures, by Neligan, vol. i. p. 366.

The Bight of Biafra next engages our author's attention. Into this sea, formerly known as the Ethiopic Gulf, the classical river Niger, the Quorra of modern geographers, empties itself by its many mouths, which form a vast delta of swampy mud. Along the banks of this river, and its tributaries, and the sea-coast generally, the most prevalent diseases are those of the cutaneous tissues, which, together with derangements of the abdominal viscera, constitute the greater proportion of the endemic affections. Higher up in the country ophthalmia and cataract are exceedingly common, Mr. Oldfield having met, at Rabbah, several hundred cases of double cataract; while cutaneous diseases are very rare, owing to the prevalence of Mohammedanism, the natives performing their ablutions twice daily. To Europeans this river does not seem to be so unhealthy as the Rio Formosa, nevertheless its emanations are eminently deleterious to the unacclimated, the mortality among the crews of the shipping averaging at least from twenty-five to fifty per cent. In describing the diseases peculiar to the inhabitants of Bonny and New Callebar, which are similar to those of other portions of the Bight, Dr. Daniell gives an account of the native process of cupping, which is chiefly used in congestion of the vessels of the brain or its membranes, accompanied by much fever and excitement. It consists in making three parallel longitudinal or horizontal incisions on either temple, from ten lines to an inch in length, and about eight lines apart. These incisions are performed by a sharp razor or a knife, and a small calabash is then applied, the air being exhausted by burning paper or cotton. Over other parts of the body, instead of cupping, the natives are in the habit of making deep scarifications, and then assiduously bathing with hot fomentations, to promote the free oozing of the blood. Hernia, both congenital and acquired, is occasionally seen in this district, particularly amongst the slaves. The natives look upon umbilical hernia as ornamental, and with this idea allow the intestines to protrude to a considerable extent. The females are not prolific, rarely giving birth to two or three children, if so many.

"Should, however, any woman at her accouchement be unfortunately delivered of twins, both the mother and her offspring are condemned to immediate destruction, inasmuch as the affair is viewed in the light of a public degradation, the Jujumen asserting that, under such circumstances, it places the woman upon a disgraceful equality with the brute creation. The wife, provided she is a favourite, not unfrequently escapes with life, but the children are never suffered to exist. This barbarous custom is also adopted

by the Ebos of the Quorra and Andony, and by the people of Guiana, in South America. It is likewise upheld in some of the towns of Benin, according to the statements of Bosman, who relates that 'in all parts of the Benin territories twin births are esteemed good omens, except at Arebo (Reggio), where they are of the contrary opinion, and treat the twin-bearing women very barbarously, for they actually kill both women and children, and sacrifice them to a certain devil.' Parturition in the negro female has been generally represented to be an easy process, and not attended with much danger; such, however, is not invariably the case. Inquiries among the different tribes have amply satisfied me, that in many instances the parturient woman has perished from want of a little timely assistance in those complex and preternatural labours which have hitherto been supposed to be of less frequency among them than in the females of more civilized communities. Puberty in these regions commences about the age of eleven or twelve years, and sometimes much earlier.

"Women, during the continuance of the catamenia, are deemed unclean, and are not permitted to touch or go near any object in use. Most of them, when in this state, retire from public life, and are usually immured in a solitary apartment, until the cessation of the discharge, and the subsequent purification, allows of their liberation; all sexual intercourse in the interim being firmly prohibited. In the interior it is a well-known fashion for the females to paint themselves in glaring colours, in order to denote the existence of this periodical secretion, and at the same time to warn strangers from being in any degree contaminated by their propinquity. It is well worthy of remark, that several of these ordinances are precisely in accordance with those Mosaic laws laid down in the book of Leviticus, which strictly enjoin many wise and salutary precautions relative to this subject. Females of all ranks are accustomed to besmear different parts of the skin with the powder of a species of redwood tree, triturated with palm oil. This pigment has been thought to correct the fetor of the perspiration, and also to enjoy certain prophylactic influences. Not a few, however, adorn themselves with it, to heighten the effect of their charms. In Katunga, Rabbah, Boussa, and other towns in central Africa, it is also used for similar purposes. Clapperton says, that it is brought from Benin, 'pounded into a powder, and made into a paste; women and children are rubbed with this, mixed with a little grease, every morning; and very frequently a woman is to be seen with a large score of it on her face, arms, or some part of the body, as a cure for some imaginary pain or other.' Circumcision is performed on both male and female; the consummation of this rite, however, in the latter sex, is not of such general prevalency as in Ebo and Old Callebar."—pp. 97–100.

As regards the white crews of the ships which frequent the Rio Bonny, the deaths seldom exceed twenty-five per cent.;

and in a healthy season, out of a large compliment of men, they do not lose a single hand. This, we think, must to a great extent depend on the custom which the author describes as being adopted by all vessels which enter these rivers for any length of time, that of being housed over with mats made from a species of palm, which, although not waterproof, serves as a temporary protection from the rays of a fervid sun and the inclemencies of the weather.

In Old Callebar the diseases of the natives seem to be almost precisely similar to whose which occur in the localities now described, but they differ in their type, which is generally of a more sthenic and inflammatory character. Dr. Daniell states that he met with one or two cases of puerperal mania, at Creek Town, on this river; a rare event, since persons of any rank, if suffering from maniacal disorders, are not permitted to reside in the towns, and are carefully avoided, from a singular idea which the natives have, that their saliva, if thrown upon others of sane mind, has the effect of rendering them similarly affected. This river, in the sickly season, is exceedingly unhealthy to the white seamen, the mortality of the crews of ships frequenting it amounting often to more than fifty per cent.

A matter of much interest in the present day, and one which may ere long become an important commercial speculation, is here noticed by Dr. Daniell. The medicinal leech is, it is feared, becoming gradually extinct in those places from whence our present supply is derived, and various suggestions have been lately thrown out with a view of providing a substitute for what must be regarded as one of our most valuable therapeutical agents. The French have recently invented a mechanical leech; it is constructed with great ingenuity, but yet is nothing more than a cupping-glass on a small scale, and, therefore, is totally inapplicable for the direct withdrawal of blood from inflamed surfaces. In this volume the author mentions that the *Hirudo medicinalis* is found in the fresh-water swamps in the upper course of the various rivers of the Bight of Biafra; it is, he says, of a much less size, but in other respects fully equal to the European species; and this fact has been fully corroborated by a former pupil of our's, who has recently returned home, after a sojourn of seven months in a ship off this shore.

There are four large islands lying off the coast of Guinea, and these are next described by Dr. Daniell. The largest and most important is Fernando Po; it is thirty-five miles in length, and from fifteen to seventeen in breadth, and is the one chiefly

visited by the homeward and outward-bound merchant vessels that trade to this portion of the western coast of Africa. This island derives much interest, moreover, from the fact of its having been selected by the British Government in 1827 as a colonial settlement, on account of the enormous sacrifice of life at Sierra Leone. Its selection was due to the favourable views then entertained of the salubrity of its climate, views which our author believes to have been in no respect overrated. But, as he says, owing to the false reports of interested persons, and the jealous fears of the other African colonies of their rising rival, highly coloured statements were secretly circulated concerning the extreme unhealthiness of the island; the settlement was abandoned, and it is now under the dominion of the Crown of Spain. The diseases of the natives are comparatively limited; cutaneous diseases are rare, and the chief affections are rheumatic pains and pulmonary disorders, owing to exposure to the inclemency of the weather. The type of the endemic maladies is more inflammatory and less adynamic than on the neighbouring continent. Scarifications for the abstraction of blood are generally practised, and in more serious cases a rude and singular process of venesection is had recourse to; a vertical incision is made on both sides of the vein, which is then raised on the point of a spear and divided transversely.

Dr. Daniell entertains a very favourable opinion of the climatorial influence of this island on the European constitution, whether it be acclimated or unacclimated. Its seasoning fever or endemic remittent is much milder and less dangerous than that of the other deadly regions of Western Africa, rarely, if ever, assuming the pestilent or insidious asthenic type. He completely controverts the opinion of Mr. Boyle, whom he classes among those writers "who have directed their animadversions upon the insalubrity of Fernando Po," mentioning the curious fact, "that this officer, who was colonial surgeon of Sierra Leone, never once visited or resided on this island."

"To Europeans who have been stationed for any length of time in the rivers or inland districts of the Delta of the Niger, a visit to this island would be attended with many advantages, especially to those who have been sufferers from that low nervous irritability or mental despondency; distressing sequelæ that not unfrequently supervene after the visitations of remittent and other febrile diseases. In agues, chronic dysentery, and other morbid affections of obstinate duration, the change of climate often produces the most decided benefit, and I can only conclude these observations by remarking, that had those individuals, whose anxiety has hitherto been to depreciate the utility or decry the healthiness of this island, been resi-

dent for the same number of years with myself and others in the pestilent swamps of equatorial Africa, they would ere this have learned to appreciate the value of the boon so appropriately placed within the grasp of most African voyagers, and one which, above all other considerations, is prized by the convalescent, viz., the rescue from a premature death, and the restoration to the usual occupations of ordinary health."—p. 162.

Of the other three islands described, the Island of Princes has acquired a tolerable sanatory reputation, from the absence of swampy, low lands, and woody marshes; but, according to the experience of the author, at certain seasons of the year it presents little or no variation in the form, the type, or mortality, of its diseases, from the other habitable localities of the Bights, while it is frequently ravaged by epidemic scourges, which attack indiscriminately both black and white people. It cannot, therefore, be recommended either for the preservation or restoration of health.

The Island of Saint Thomas is more healthy than the Princes', but less so than Fernando Po. The fevers to which its white inhabitants are subject resemble those of the coast, but are more tractable in their cure and less adynamic in their type.

The Island of Anno Bona, the most southerly of the group, contains no white inhabitants. It has been considered, but the author thinks upon doubtful authority, to be the most healthy of all the islands in the Bight of Biafra.

We have now brought to a conclusion our brief notice of Dr. Daniell's volume. It contains matter of much practical interest, calculated to disseminate correct views of the nature of the influences which, in these regions, produce such deadly effect on the constitution of Europeans. In further inquiries as to the prevention of disease amongst the white inhabitants, attention should be chiefly directed to the effects of previous acclimation in countries varying less in atmospheric and other physical peculiarities from more temperate regions than the west coast of Africa does. Of the truth of this remark a singular fact is noticed by Dr. Daniell, namely, that the two healthy seasons for Europeans in Western Equatorial Africa are most unfavourable to the health of the Negroes, and *vice versâ*. We have been the more pleased with this volume, from the fact of its author being a military medical officer. We know that their laborious duties, so much increased by the system of keeping full reports of every case which may fall under their notice, too often render it impossible for the medical officers of the British army and navy to publish their observa-

tions of the diseases peculiar to various parts of the world, where they are thrown by their duties. We, therefore, feel the more thankful for a publication such as that we have been now considering, for we are confident that it is by similar writings the obscurity that still envelopes the endemic diseases of warm climates will be at length dispelled.

Medical Topography of Queenstown ; being an Examination into the Climate and the Influence it exercises on Disease, especially Pulmonary; with some Notices of the Natural History of the Locality. By David H. Scott, M.D., M.R.C.S., &c. Cork, Bradford and Co. 1849. Post 8vo., pp. 102.

A Treatise on the Climate and Meteorology of Madeira. By the late J. A. Mason, M. D., Inventor of Mason's Hygrometer. Edited by James Sheridan Knowles. To which are attached a Review of the State of Agriculture and of the Tenure of Land; by George Peacock, D.D., F.R.S., &c., Dean of Ely, and Lowndean Professor of Astronomy in the University of Cambridge. And an historical and descriptive Account of the Island, and Guide to Visitors; by John Driver, Consul for Greece, Madeira. Liverpool, Deighton and Laughton. 8vo. pp. 388.

Changes of air, of scene, and of climate, have been long recognised as possessing an important position amongst the most powerful means which can be employed for the relief or cure of various diseases, more especially those of a chronic nature.

To the physician who is desirous that his patient should derive the greatest possible amount of benefit from such changes, the choice of a proper locality to send him to is often a matter of considerable anxiety; and to the patient himself the selection is frequently of vital importance. Hence all authentic information which is afforded upon the medical topography of the different places usually resorted to by invalids, must be acceptable to the profession as well as to the public.

Though there is no scarcity of authors who have written upon this subject, we consider that very few are capable of conducting such a series of observations, meteorological and general, as shall render their publications really valuable. For this purpose a degree of steady perseverance in making and an accuracy in recording observations are required, together with an amount of general information upon the various subjects concerned, which does not fall to the lot of every man; and though

many avail themselves of the valuable tables generally resulting from such investigations, few pause to reflect upon the amount of time, labour, and skill which are employed in their construction.

In the thirteenth volume of the First Series of this Journal there appeared a paper by Dr. Scott upon the medical topography of Cove, which forms the chief groundwork of the present volume. Additional opportunities, and a more extended period for repeating the observations, and testing the accuracy of the details already given, together with greater facilities for comparing them with the accounts published of other places, have enabled the author to add very considerably to the information contained in it; and he has introduced much new matter and numerous tables not before given.

Queenstown (formerly Cove) has been long favourably known to the public as possessing an extraordinary mildness of climate; and the results of the carefully conducted inquiries of Dr. Scott, contrasted with those made elsewhere, show that this fame has been well deserved, and that, in many respects, it is not inferior to any, but very much superior to most of the watering places in the south of England and France, yielding only to Madeira in the possession of the chief requisites which constitute any locality a safe retreat for the invalid suffering from pulmonary affections.

Many suppose that mere temperature is the all-important point for consideration in selecting a change of residence for an invalid, but several other matters as well are to be taken into account. The hygrometric state of the air; the general prevalence and comparative duration of particular winds; the manner in which these influence the condition and temperature of the atmosphere; the number of rainy days; the total amount of rain which falls, all form so many topics of necessary inquiry; and in the volume before us, these have not been overlooked or neglected.

After a general notice of the geographical position and geological peculiarities of the island of Cove, Dr. Scott gives the results of several years' careful notice of the temperature of the air by day and night, as ascertained by self-registering thermometers; and having furnished the *means* of these for the entire year, he adds a monthly summary, which is of great value.

He then proceeds to consider the distribution of heat in its different relations to the days, months, and seasons, comparing the observations made in Queenstown with those registered in some other places in corresponding years, and the entire

are carefully tabulated for easy reference. It appears from these returns, that Queenstown stands higher as to mean temperature than most of the places of repute in the South of England and France, possessing at the same time a most remarkable equability in the range of its temperature, which is of the first importance to the invalid; indeed, this very great equability is one of the chief characteristics of the place, and in this respect it is not equalled even by Madeira.

Much important information is conveyed respecting the variations and indications of the barometer, and, as before remarked, the hygrometric state of the atmosphere is most carefully noted. For full particulars upon these subjects, we must refer to the book itself.

From the numerous tables introduced by Dr. Scott, and the general amount of statistical information he has collected, we can learn that Queenstown possesses a remarkable salubrity and equability of climate, and that its inhabitants enjoy an exemption from many diseases which are elsewhere endemic. So rare, too, are pulmonary diseases, rheumatism, and those other affections most frequently benefited by change, that we may fairly conclude, the invalid who is obliged to leave home will find here as favourable and agreeable a place of sojourn as any which Great Britain or the continent of Europe can afford.

The publication of Dr. Scott is highly creditable to his talents and industry, and we are pleased to see it in its present form; it contains much useful information upon many points, possessing an interest as well for the physician as for the invalid and valetudinarian. The author has indeed entered, more fully than is usual in similar works, into many matters connected with the atmospheric and other peculiarities of the island; the general influence of the climate upon various diseases is set forth; the positions best suited for the residence of those suffering from different affections are pointed out; and some sketches of the botany and natural history of the district are appended.

So much has been published on the climate of Madeira that any new facts regarding its influence on disease can be scarcely expected; yet there has been hitherto wanted a complete register of the thermometrical and barometrical peculiarities of the island, on which implicit reliance could be placed; and this want is supplied by the late Dr. Mason's volume. Dying at the early age of twenty-eight, his name constitutes another addition to the list of martyrs in the pursuit of medical science which our profession has so lavishly supplied; and his labours

afford a melancholy proof that even disease and suffering combined cannot check the physician in his search after knowledge. Dr. Mason is well known to philosophers from his construction of the hygrometer which bears his name, and which is so easy, yet so true, in its application. Having been ordered abroad with the view of arresting the development of some phthisical symptoms from which he suffered, his scientific pursuits suggested to him the use of it, in addition to the other means ordinarily employed, in an inquiry into the climate of Madeira, whither he proceeded. His observations included from the 1st of March, 1834, to the 28th of February, 1835, and were taken with great regularity, those with the hygrometer "being made every three hours"(*a*). By these means he has been able to confirm the opinion put forth by Dr. Heineken, and which has been so generally overlooked by the profession, namely, that, during the greater part of the year, *the atmosphere of that island is saturated with humidity.* The confirmation of this fact we regard as of the greatest importance; for there is no condition of climate, due regard being had to equability of temperature, that affects the invalid so remarkably as the hygrometrical state of the atmosphere. In some consumptive patients the symptoms are ameliorated by breathing a dry air and the disease aggravated by moisture, while in others the reverse is the case. We therefore regard it an established rule to make particular inquiries on this head in every case, before recommending a special climatorial change.

Appended to Dr. Mason's researches is a meteorological register, kept at Funchal, Madeira, by Mr. M'Euen of Philadelphia, from the 10th of December, 1848, to the 1st of June, 1849. This is especially valuable in consequence of the recent date at which the observations were made, and its corroboration of the opinion put forth by that physician regarding the variability of the climate even in that island.

We cannot now enter into any analysis of this volume, indeed it scarcely admits of it; but we strongly recommend it to our readers as affording most useful knowledge on a subject on which they are so frequently obliged to exert their judgment. It also forms an excellent source of information for persons about to visit Madeira; and its beautiful typography and binding render it an ornamental book for the table. Indeed we cannot take leave of the two volumes we have now noticed without referring to the admirable style in which they are printed, both having been published in provincial towns, that of Dr. Scott in Cork, and that of the late Dr. Mason in Liverpool.

(*a*) Page 7.

The Three Kinds of Cod Liver Oil comparatively considered, with reference to their Chemical and Therapeutic Properties. By L. J. De Jongh, M. D., of the Hague. Translated from the German, with an Appendix and Cases, by Edward Carey, M. D. London, Taylor, Walton, and Maberly. 1849. 8vo. pp. 176.

Treatise on the Oleum Jecoris Aselli, or Cod Liver Oil, as a Therapeutic Agent in certain Forms of Gout, Rheumatism, and Scrofula: with Cases. By John Hughes Bennett, M. D., &c. London, Highley. 1841. 8vo. pp. 180. With an Appendix for 1847. Edinburgh, Maclachlan. 1848. 8vo. pp. 197.

On the Structural Relation of Oil and Albumen in the Animal Economy, &c., &c. By John Hughes Bennett, M. D. Pamphlet, pp. 10. 1847.

On the Use and Administration of Cod Liver Oil in Pulmonary Consumption. By C. J. B. Williams, Professor of Medicine in University College, London. From the London Journal of Medicine for January, 1849.

Cod Liver Oil, its Uses, Mode of Administration, &c. &c. Compiled by John Rayner. London, Churchill. 1849. Pamphlet, pp. 16.

An Inquiry how far Consumption is curable, with Observations on the Treatment, and Cases illustrating the Efficacy of Cod Liver Oil. By James Turnbull, M. D., Physician to the Liverpool Infirmary. From the London Journal of Medicine for February, 1850.

It has been remarked, as well by discoverers as by those who have reaped the profits of their genius, that great improvements in the arts and sciences make slow progress among mankind,—a complaint indisputably well founded, in spite of some remarkable instances to the contrary. Few will doubt that, on the whole, this slow reception of great inventions, though in itself an evil, has been of no inconsiderable benefit to the human race. To disbelieve the *new* is a deeply-fixed principle in even the best regulated mind. But we must not forget that, in this case, experience aids the natural impulse ; since, unfortunately for the interests of all that is great in humanity, in disbelieving the *new*, we are in the majority of instances disbelieving the *false*. It would have been well for the medical Art if its professors

had been as sceptical of the new as mankind in general are. The facility with which a physiological hypothesis, or a supposed curative agent, becomes adopted by medical men, is probably, at the present moment, the greatest obstruction to the firm advance of our science. How much of the results of the wrong-headed belief of our immediate predecessors are we yet engaged in throwing down ; and how much do we see constructed by our own generation that must share the same fate at the hands of our successors. Let but a new remedy be suggested, and the whole world is ready to sink the clearest pathological distinctions, and believe the most opposite diseased conditions susceptible of its curative powers. Digitalis, colchicum, creasote, naphtha, prussic acid, stramonium, iodine, and many other equally valuable medicines, have suffered from the baneful effects of exaggerated advertisement followed by irrational belief. For, as might be expected, when the transcendant merits ascribed to new remedies are found, after previous full belief in the truth of the first statements concerning them, to be for the most part a mere fiction, it is an easy step to complete disbelief of their possession of any virtues; and it is only after great labour, a collection of irrresistible facts, and the lapse of considerable time, that the *active* prejudices of the medical mind can be overcome, and a perhaps important medical agent placed on its true basis. Such has been the actual progress of therapeutic medicine in our times, whether we consider drugs simply or more general therapeutic systems. Rapid rise, sudden decadence, slow and painful resuscitation, and final just localization in a place very far below their original high status, are the great features of their history. May we not state this of digitalis as a drug, and of water as a system ?

The oil of the cod's liver has not, however, suffered from an over-ardent belief in its powers, at least in this country. It offers a singular exception to the general history of great remedies in this respect. It is certain that it has been used from time immemorial as a popular remedy in the northern regions of Europe, whence it is probable that it found its way into Germany and Holland, in both of which countries it was long used by the people before medical practitioners recognised its remedial properties. Naegele, the celebrated Heidelberg Professor, informed Dr. Bennett

"That during a period of eleven years that he practised at Dusseldorf, no peasant ever applied to him, whatever was his complaint, without having previously tried the cod liver oil. It is their universal practice when ill, first to take the oil, and if it fails, then, and not till then, to ask a medical man for advice."

It appears to have been almost as generally used in the north of Scotland, but the first authentic account of the oil by members of the profession was given by Percival, Darbey, Bardsley, and Kay, all of Manchester, where it was introduced in 1766. It was used in the infirmary of that town almost exclusively as a remedy for gout and rheumatism, and was considered so efficacious, that in 1807 Bardsley states:

"This medicine has preserved its reputation in our infirmary unimpaired during the period of thirty years, for I find its annual consumption to have been from fifty to sixty gallons soon after its introduction in 1766; and the quantity dispensed for many years back has seldom fallen below the above amount; the last year it exceeded forty gallons"(*a*).

In 1822 Schenk published in Hufeland's Journal sixteen cases of chronic rheumatism, which he had successfully treated with the cod liver oil. These cases, says De Jongh, as well as twenty others, which he published four years later, established anew the virtues of the cod liver oil in chronic rheumatism, and first excited medical men to examine for themselves what were the virtues of this medicine, the reputation of which, since the year 1815, had been in vain bruited from the banks of the Rhine, from Westphalia, and from the mountains of Scotland.

Schenk used it in rheumatism, gout, and scrofulous affections, and held it to be as much a specific in these diseases as bark in ague, and mercury in syphilis. Immediately after Schenk's cases became known to the profession, the German and Dutch physicians seem to have emulated each other in using and reporting upon this remedy. Dr. Bennett talks almost complainingly in his Preface of the forty German medical periodicals, which were the sources of his information; while, after the very favourable account of its effects by the Manchester physicians, the profession seemed in this country to have almost lost sight of it. A slight notice of its value as an application to impetigo of the hands, by Marshall Hall, in the tenth volume of the Medical Gazette, and a short paper by Mr. Donovan in our former Series(*b*), constituting the sum total of English literature on this subject, until the appearance of Dr. Bennett's treatise in 1841(*c*). It is impossible to deny to this physician the great merit of having been the first to

(*a*) Dr. Bennett's Treatise, p. 15. (*b*) Vol. xvii. p. 357.

(*c*) There can be no doubt that the oil, during this period, was used, to a certain extent, in different parts of England. We have heard from private sources of its having been much employed in Derbyshire as an anti-rheumatic remedy.

bring the cod liver oil prominently before the notice of the medical profession of this country, having previously, with the greatest industry and ability, collected all the established facts concerning it; at the same time attempting a rational explanation of its mode of operation, which, possibly modified, must, we believe, form the basis of any future sound theory of the matter. Dr. Bennett's exertions to introduce the oil to the profession do not appear to have been confined within the limits of the treatise at the head of this article, for in the Appendix for 1847 we are told that he had strongly recommended its use to his medical friends, and that all those who could be induced to try it spoke most favourably of its great powers.

We wish to impress these facts upon our readers the more distinctly, as we see a decided impression exists among the profession that the recent paper of Dr. Williams in the London Journal of Medicine, has been the main cause of the general introduction of the oil into medical practice; an impression which the very dexterous juxtaposition of certain sentences in that paper is well calculated to produce, but which is not the less opposed by the facts of the case. It is observed in the paper alluded to, that

"If the experience of other practitioners accords with my own on this point, I would give as the reason of this tardy introduction, the disgusting smell and taste of the oil, as it has been commonly prepared, and an impression generally prevalent, that the efficacy of the remedy is connected with these offensive properties."

Now, in the first place, it is necessary to state that at the time the above sentence was published the oil was actually in extensive use in Edinburgh and in this city; and we happen to know that for a considerable period before the journal, in which it was written, saw the light, it was given to a great extent, and most successfully, by the physicians of one of the largest provincial hospitals in the kingdom, in the very disease in which its benefit has been so signally illustrated by Dr. Williams. But that gentleman wishes his readers to imagine that the want of a pure oil was the obstruction to its general use, and that he having, in conjunction with an eminent London druggist, supplied the desideratum, there is no reason why *now* the profession should not commence to use it. This is very ingenious; but why did Dr. Williams let his readers into the secret of his knowledge of Mr. Donovan's preparation of pure oil(*a*), made *before* the date of Dr. Bennett's Treatise, wherein full infor-

(*a*) See the Essay of Mr. Donovan, *loc. cit.*, and vol. xxviii. p. 40.

mation concerning it may be found? That able chemist and Dr. Edmondston of Shetland, appear to have arrived at a perfection of preparation which might have stimulated Dr. Williams to a full trial of its properties. "English stomachs," we should have fancied, would have found no difficulty in taking an oil bearing the following characters:

"The oil obtained by Mr. Donovan has a specific character of ·934, is of a pale yellow colour, and the taste resembles that of a cod boiled for the table, when in excellent condition. It is bland, by no means disagreeable, and totally free from rancidity. It is very liquid. In cold weather it deposits much stearine, and this ought not to be separated. The oil prepared in Shetland has a mild, but slightly fishy taste, a faint, but peculiarly marine smell, a greenish colour, and a consistence nearly that of castor oil."

So far as this point is concerned, therefore, we would suggest that Dr. Williams' chief merit consists in having very prominently advertised a London tradesman's operative skill, and his own tardiness in accepting medical improvements from other quarters. We are constrained to deny that Dr. Williams has accurately stated the fact, when he informs us that Dr. Bennett has favoured the notion that the efficacy of the remedy is connected with its offensive properties. We would refer our readers to the part of his original essay which refers to the methods of preparation, in proof that almost the contrary to this is more nearly the truth. The oil described as "red," "golden yellow," "resembling old Malaga wine in colour," examined by Dr. Bennett at the meeting of a medical association at Wildbad, and expressly stated (p. 20) "to be transparent, and less disagreeable to the smell and taste than that of a *light straw colour*,"—an oil equally expressly stated to be used, for the most part medicinally, throughout Germany,—subsequently examined by him in Mayence,—found in a great Parisian house afterwards, and, wonderful to relate! in London itself(*a*), not to speak of two great Edinburgh houses, where it was the only variety known,—an oil declared "to be the best"(*b*) in the general summary of the facts of the Treatise, and most pointedly alluded to in the Appendix for 1847 as having been universally employed in Edinburgh, and been productive of the best effects, as in Germany,—the oil everywhere commended by Dr. Bennett for medical use,—does by no means warrant the assertion that he has connected its therapeutic efficacy with any offensive properties.

(*a*) At Messrs. Jones and Co., Gracechurch-street. (*b*) Page 175.

In reference to the superior virtues of the "pure oil," as Dr. Williams terms that which is *nearly free from taste and smell*, it becomes both him and us to speak with modesty at least. Nearly all experience is against Dr. Williams here. Richter, at one period of his researches, denied any therapeutic value to the paler oil; and we shall not affect to inform him that the chief German physicians, after the most extensive trials, have ever given the preference to the *quasi*-impure dark oil, which he has failed to introduce into the stomachs of his patients. We have used an oil, possessed certainly of sufficiently "offensive properties," in a vast variety of tubercular and strumous affections, and our results have been fully as favourable as those *proven* to have occurred in Dr. Williams' cases; and we can add our experience to that of Dr. Bennett(*a*), that children will sometimes take even this oil with extravagant fondness. With our present knowledge, it is certainly injudicious to aim too much at pleasing the palates of our patients by the selection of an oil possessed of the characters mentioned in his paper; but we must allow De Jongh, an authority not easily to be confuted on this point, to state his opinion:

"So long, indeed, as it is left undecided to which constituent part the cod liver oil owes its efficacy, we would not advise the consideration of its agreeable qualities to be urged too far. A well-tasted cod liver oil may be prepared in the above-mentioned [Mr. Donovan's] manner; but it will be found wanting in the component parts of the watery extract [biliary matter], and probably also in the volatile acids, together with the gaduine. That poisonous properties(*b*) are generated by the staleness of the livers is not probable; because, by the constant use in Holland of the brown oil, which is frequently obtained from the stale livers, such an effect would have been observed."—p. 70.

De Jongh(*c*) has given decisive evidence that the three kinds of oil owe their individual characteristics solely to the time and heat employed in obtaining them; that they are, or rather may be, but three varieties of genuine Bergen oil, the product exclusively of two (or at most three) species of the genus *Gadus*. He has brought forward some facts which, though certainly insufficient to *prove* his opinion, should at least en-

(*a*) Appendix for 1847, p. 182.

(*b*) Dr. Bennett also (p. 29) controverts Donovan's opinion concerning the evil effects of putrescency in the oil.

(*c*) The father of De Jongh is a Bergen oil merchant, and his son appears to have fully availed himself of this circumstance to get the most accurate information, which he obtained direct from the Dutch consul at Bergen, and other authentic sources. See p. 6, *et seq.*

gender a suspicion that the brown oil, that oil which is affirmed to be prepared by boiling or roasting *putrescent* cod livers, possesses a higher therapeutic value than the other varieties. We have just seen that the paler oils are wanting in the biliary matter, and probably in the volatile acids, to the more copious formation of which the long operation of heat on the brown oil contributes; and De Jongh further expresses his belief that this latter oil owes its greatest power to this biliary matter and butyric acid. Klencke(*a*) infers the importance of the biliary matter, without having known of its existence in the cod liver oil; for he declares the yellow cod liver oil to be a substitute for bile; and the German translator of De Jongh's Treatise states, in reference to the substitution of other oils and fat, that the presence of the constituent parts of the bile establishes the difference, and gives the preference in favour of this oil. Even Dr. Williams(*b*) has observed its power in restoring the appetite and improving digestion, and believes that this peptic influence is due to its containing some biliary principle, which both favours its divisibility in the process of digestion, and promotes the natural secretions of the liver; but if this be the fact, and if De Jongh's analysis be correct,—and we fully believe both,—then Dr. Williams has been using an oil of the least efficacy. On the whole, it must be fairly admitted that at present there are no well-established facts in proof of the so-called *pure oil* being the most efficient, or even as being equally efficient with other varieties; while, on the other hand, we are very far from asserting that the brown or red oil of De Jongh and Bennett have been decisively proved to possess qualities superior to the former variety, and connected with their marked physical characteristics.

It is obviously a little too soon to dogmatise on this point, and not more premature than unsafe. It is important that the cod liver oil should come into general use as an anti-strumous agent, and to this end it is well that the profession should be aware that *there is no oil so bad as to have been proved to be without most valuable properties as a curative agent, nor so good as to have been demonstrated to be therapeutically more potent than the worst.*

Dr. Williams has added his experience to the existing stock of information concerning the value of this oil in phthisis, and has thereby given weighty confirmation, from his well-

(*a*) Klencke's views are referred to in several portions of De Jongh's Treatise.

(*b*) London Journal of Medicine, No. i. p. 16.

known skill in thoracic physical diagnosis, to the already received opinion among enlightened members of the profession; and we should not have thus early entered into an examination of certain parts of his paper, bearing upon the early use of the oil, were it not for the purpose of removing an impression likely to be produced by them, injurious to the just claims of Dr. Bennett, as the prime promoter of its use in these countries. It was enough punishment for the introduction of one of the very greatest therapeutic agents of the age,—one which has, we confidently believe, permanently extended our power over the most fatal and the most frequent of human maladies,—to have been scoffed at by the critics(*a*) for having taken such pains in introducing to the notice of his brethren any *single* therapeutic agent, not being, moreover, a remedy of *delicate use*, in regard to which minute details might be justifiable, the effects of which, too, were either indeterminate or unsatisfactory. It was enough to be satirized for conferring the benefit, without being forgotten when the benefit became patent and recognised by all. This is a double injustice, which it is impossible for any man to deserve, and against which, while we undertake the responsibility of criticism, we shall ever raise our voice.

We will now proceed to analyse the chief features of Dr. De Jongh's Treatise, in doing which we shall have frequent occasion to refer to the other Essays we have placed at the head of this article. In the first section we find a highly satisfactory account of the source, method of obtaining, and physical properties of cod liver oil. It appears pretty certain that the several species of *Gadus*, at least six, are used everywhere indiscriminately for the production of the oil,—depending, probably, as Dr. Bennett has suggested, upon the greater or less quantity of the various species found on particular coasts. The term "oleum morrhuæ," so generally used in this country to indicate the cod liver oil, is only so far correct, as applied to the oil obtained at Newfoundland, or on our own coasts, the Bergen oil, which is alone officinal in the German Pharmacopœias, being exclusively obtained from the *Gadus carbonarius*, *Gadus callarias*, and *Gadus pollachius*.

De Jongh makes three varieties of oil, the clear pale (*Oleum flavum*); the light brown (*Oleum subfuscum*), and the brown (*Oleum fuscum sive nigrum*). Dr. Bennett makes four varieties, according to De Jongh, without sufficient reason,—the pale, yellow, red, and brown. Both these authors give the most

(*a*) British and Foreign Medical Review, vol. xiii. p. 197.

varied statements concerning the method of obtaining the oil, from which one conclusion is clearly derivable, that very different modes are actually employed in commerce. In order to get more precise information, De Jongh, as we have already stated, forwarded queries to persons residing in Bergen and Tromsoe. The following answer of his chief correspondent embodies the main facts of both Treatises on this question:

"As soon as the fish is brought to land, the livers are cut out and thrown into vessels, where they ultimately remain. If this is done at irregular times, the pale oil is not so clear and pure as when the fishery is concluded at once. When the fishery is ended (and for which there is no fixed time), the clear oil which comes off in these vessels is skimmed, poured off, and put into barrels. This is the pale oil. The residuum is then boiled, and thence is produced the brown oil. The light-brown oil is the impaired pale oil; partly because the livers have lain too long, and partly because the pale oil is old, and has remained in warehouses, where it has been exposed to damp. The clearness of the pale oil depends particularly on the fatness of the liver, and on the method of preparation."—p. 8.

In another letter it is stated that the livers of from 40 to 80 cwt. weight of stockfish are thrown into tubs, and are allowed to remain there until they become putrescent, when the oil runs off of itself; this, when skimmed, is the pale oil. We are also expressly told, that all these kinds of oil are prepared alone from fish *livers*.

We will now proceed to lay before our readers the main results of De Jongh's analysis of the oil, by far the most important section of his book, but upon which we must dwell very briefly. The German translator remarks that almost all previous analyses were directed towards the verification of the presence of iodine, of which there is abundant evidence in the treatises both of De Jongh and Dr Bennett. The latter took infinite pains to satisfy himself upon this particular, and arrived at the same conclusion, and in all essential points by the same process, as De Jongh. The process of this chemist, and that of Dr. George Wilson, given in Dr. Bennett's Treatise, differ only in comparatively unimportant details.

Up to the time of these researches, the greatest difference of opinion prevailed upon a point, apparently so easy to settle, as the existence or non-existence of iodine; a difference explained by the circumstance(*a*), that mere solution in alcohol,

(*a*) De Jongh's Treatise, p. 17. We subjoin the details of the process for the discovery of the presence of iodine. The oil is saponified with pure potash or soda in excess, and by long boiling evaporated to dryness; the soap is carbonized in a platinum crucible, and then saturated

ether, or water, or even the direct carbonization of the oil and treating the carbon by means of solution, fails to prove its existence, which can only be effected by the saponification of the oil with potash or soda. The soap in most cases gives off the iodine by direct solution in alcohol and testing the solution with sulphuric acid and starch, though it is stated that it is better at all times to carbonize the soap previously. When the separated soap is decomposed by an acid, the iodine remains in the oleic acid,—the mother-liquor is consequently free from iodine. Hence, the German translator remarks, the opinion that iodine is held free, or as hydriodate of soda, in cod liver oil, is erroneous, "as it is in every case found in organic combination, perhaps with a fatty substance," and, with De Jongh, states strongly his belief that real and *unrefined* cod liver oil always contains iodine, and that its presence is a proof of its genuineness(*a*). It is remarkable, and should be remembered in therapeutic history, that Kopp believed that the oil contained iodine, from its effects upon the human economy; and that the researches by Hopfer de l'Orme, which eventuated in its discovery, were made at his suggestion, under the influence of this impression.

The watery extracts of the three sorts of oil are declared to be perfectly similar in their qualitative relations, while there is a marked difference in the *relative proportions* of the individual substances separated from them. Their successive solution in ether and rectified spirit showed that the cod liver oil must be mixed with the component parts of bile; the ethereal extract contained fellic acid, cholcic acid, margarine, a little oleine and bilifulvin; the alcoholic, bilifulvin, bilifellinic acid, and two apparently peculiar bodies. The result of De Jongh's analysis is decisive that there is a larger proportion of these biliary ingredients in the brown than in the light-brown, and, to a much smaller extent, however,—in this latter oil than in the pale variety.

We shall not venture to pledge ourselves to the quantita-

with carbonate of ammonia, and dissolved in water or alcohol. In the latter case, after the evaporation of the solution, there remains a pretty nearly pure hydriodate of potash or soda, which may serve for the quantitative analysis. In the qualitative analysis the iodine is best discovered by putting the evaporated watery or spirituous solution of the carbonised soap which contains the salt mass into the bottom of a glass tube, with some concentrated sulphuric acid poured on it; then, placing in the opening of the tube some starch paste, it should be gently warmed. The ascending vapour of iodine, if any be present, will show a deep violet colour.

(*a*) It is important to mention that De Jongh found more iodine in the pale than in the brown variety, in the proportion of 0·0374 per cent. to 0·0295 per cent.

tive, or, in minute particulars, even to the qualitative analysis of our author, holding as we do a most wholesome scepticism of the perfect accuracy of even the best performed organic analysis; and if there were any animal secretion which should more than another justify this, that secretion is the bile, in which the existence of an important element in large quantity has been discovered since the date of De Jongh's Treatise in its original language; but it is impossible to read the careful and elaborate researches therein reported, without being convinced of the presence of bile in the oil, and that to a marked degree in the brown variety.

The next portions of the analysis are taken up with the consideration of the glycerine and fixed fatty acids, after which we find "gaduine, the brown substance of the cod liver oil," examined. It has hitherto been a question, says De Jongh, concerning the nature of the substance which adheres so pertinaciously to the oleic acid of the cod liver oil, and which accompanies it through the whole process of saponification and separation; it is shown that by the saponification of the impure oleic acid with an excess of soda, the greatest part of it goes over in the alkaline ley. By an easy chemical process, a brown substance is obtained from the ley, of the very same compound nature, and possessing precisely the same qualities in the three kinds of oil; to this substance De Jongh, its discoverer, has given the name of gaduine. Some of its principal characters are the following; in the mass it is of the consistence of wax, and of a dark brown colour; *it smells of cod liver oil;* dissolved in water, it is almost perfectly bleached by chlorine gas; it is insoluble in water; its formula, free from water, is $C_{35} H_{12} O_7$. As a perfect separation of this substance from the oleic acid has not been effected, it cannot be determined by the quantitative analysis.

De Jongh next enters upon the consideration of the butyric and acetic acids, neither of which has been found by previous analysts; but as he was unable to detect the phocenic acid discovered by Chevreul in the oil of the dolphin, and which has been asserted to exist in the cod liver oil, he supposes that acid to be a mixture of acetic and butyric acids. We have already hinted that the brown oil contains a much larger quantity of these acids than the pale,—a fact worthy of being remembered,—though we can scarcely agree with the author, that these acids have very much to do with the therapeutic properties of the oil. Then follows an account of the inorganic constituents, of one of which, perhaps the most important,—Iodine,—we have already spoken. Next we find, taken up in

succession, bromine, chlorine, phosphoric and sulphuric acids, phosphorus, sulphur, and, finally, the bases lime, magnesia, and soda.

Our readers may now form an idea of the complex chemical nature of this oil, and will probably be disposed to conclude that it is somewhat premature to restrict its curative properties to this or to that principle. But we feel we should be scarcely doing justice either to it or to the author, did we not extract the general summary of the results of the analyses.

	Brown.	Light Brown.	Pale.
Oleic acid, with brown substance (gaduine, and two peculiar bodies), .	69·78500	71·75700	74·03300
Margaric acid, ...	16·14500	15·42100	11·75700
Glycerine, ...	9·71100	9·07300	10·17700
Butyric acid, ...	0·15875	. . . .	0·07436
Acetic acid, ...	0·12506	. . . .	0·04571
Fellic and choleic acids, with some oleine, margarine, and bilifulvin, . .	0·29900	0·06200	0·04300
Bilifulvin and bilifellinic acid, and two peculiar substances, ...	0·87600	0·44500	0·26800
A peculiar substance, soluble in alcohol of 30°, ...	0·03800	0·01300	0·00600
A peculiar substance, insoluble in water, alcohol, and ether, ...	0·00500	0·00200	0·00100
Iodine, ...	0·02950	0·04060	0·03740
Chlorine with some bromine, ...	0·08400	0·15880	0·14880
Phosphoric acid, ...	0·05365	0·07890	0·09135
Sulphuric acid, ...	0·01010	0·08595	0·07100
Phosphorus, ...	0·00754	0·01136	0·02125
Lime, ...	0·08170	0·16780	0·15150
Magnesia, ...	0·00380	0·01230	0·00880
Soda, ...	0·01790	0·06810	0·05540
Iron, ...	A trace.		
Loss, ...	2·56900	2·60319	3·00943
	100·00000	100·00000	100·00000

One glance at this analysis serves to show a considerable difference in the three oils.

"If we now turn to the comparison of the three kinds of cod liver oil, it is shown, first, that the lighter kinds are richer in inorganic substance (as well as in iodine(*a*)) than the brown kind; whilst, on the contrary, the latter is richer in the component parts of the bile, butyric and acetic acids. In general the light brown and the pale oil agree in every respect, much more than the brown, by which it is established that the light brown is only a pale oil which has become old. The great quantity of salts, iodine, and

(*a*) Entirely opposed to the general opinion.

phosphorus, contained in the light kinds of cod liver oil, must be thus explained,—that the richest oil, when flowing off quickly, takes up and dissolves the smallest quantity of these substances contained in the livers; while, on the other hand, the last oil, which comes off with the assistance of heat, appears to dissolve the substance of the bile somewhat more copiously."

The trace of iron is merely casual, being derived from the iron kettles in which the livers are boiled or roasted.

However modified this analysis may be, by future investigators, there can be but little doubt that we have all the data necessary, as far as chemical analysis can assist us, for the formation of a rational hypothesis of the mode of action of the oil. It is certain that in giving this oil we are giving a weak solution of these powerful elements, namely, iodine, chlorine, and bromine, which, howsoever combined, appear to exert a marked influence upon the capillaries, and, through them, upon the growth and nutrition of the body, to which we may add phosphorus, whose energetic action upon the same system of vessels we are only commencing to recognise. But, not to speak of other, probably not unimportant constituents, we are also giving a ready-made solution of a complex animal secretion, which has already discharged a function of the first importance in the chemico-vital processes of assimilation in the economy; and this solution is an animal oil,—the very basis of cell-growth,—the first stone of the great fabric of animal life,—indissolubly intertwined with those functions upon which its continued existence depends. Who shall put his finger upon a constituent of this solution and say, *this* and *this only* is the source of its manifold virtues? But we are anticipating the course of our review.

We have already laid before our readers a brief statement of the history of the use of the oil. They will find a copious resumè of this part of the subject in the Treatises of Drs. Bennett and De Jongh. The learned German translator has here made many additions to the latter, but we must hasten forwards to the following part of the subject, upon which we shall have much to say.

Upon the first inspection of the section, "On the Diseases in which the use of the Cod Liver Oil is recommended," that which immediately strikes the mind is, their number and apparently opposite characters,—a circumstance, we are afraid, which is likely to engender a suspicion that it belongs to those remedies which have so often been asserted to cure, in a certain inscrutable manner, all human maladies, and which have almost equally often turned out to be very plain remedies,

suited to a very few diseases. But we caution the inquirer, at the outset, not to fall into error upon a point so likely to mislead; for the truth is, that, with but few exceptions, all the diseases herein named have a certain family resemblance, and, for the most part, a similar pathology at their origin. And even if this were not the case, it must not be forgotten that we are here dealing, not with a simple binary combination of a negative and positive electric,—for example, iodide of potassium,—but with an agent of the greatest complexity; with the actual curative ingredient of which, if there be but one, we are not certainly acquainted. This latter consideration should alone be sufficient to counteract a scepticism which would be but reasonable in such a case as that just put.

We have already said that, at first, the cod liver oil was almost exclusively used for rheumatism, and, if Dr. Garrod will still allow us the phrase, the *allied* affection, gout. It was held in the highest repute in the former of these affections by Percival and the Manchester physicians, more than seventy years ago; and De Jongh's dictum, "that all medical men agree in extolling cod liver oil as a remedy in chronic rheumatism," is indisputable. We have already stated that at its introduction it was used in Manchester chiefly as an anti-rheumatic remedy. Dr. Bennett quotes the following interesting account, from Percival's Essays, of the circumstances which led to its being prescribed:

"A woman who laboured under the most excruciating rheumatism, and was an out patient of the Infirmary, being advised to rub her joints with the oil, was induced to take it at the same time internally. A few weeks restored her to the use of her limbs, and she was cured. However, little attention was paid to this case, as it was supposed that the alteration of the weather, and the medicines she had taken before, had caused the cure. About a twelvemonth afterwards, her complaints returned with double violence, and the same remedy restored her to health again. Encouraged by this second recovery, Dr. Kay, one of the physicians to the Infirmary, prescribed it for other patients, in similar cases; and it answered his most sanguine expectations. Since then it has been used by the other physicians with the greatest success."

Dr. Percival compared the effects of guaiacum and the oil, by prescribing each for different patients in similar circumstances; these trials almost always terminated in favour of the oil. Frequently those taking the guaiacum were so sensible of making slower progress than their fellow-patients, that they requested the oil to be given to them. A great array of authorities, interspersed with some selected cases, in proof of the effi-

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cacy of the oil in rheumatism, is quoted in the treatises before us. De Jongh successively enumerates rheumatismus chronicus, ischias rheumatica, cardialgia and hemicrania, prosopalgia rheumatica, in which diseases there seems a pretty general agreement as to the virtues of the oil; but we feel bound to state our conviction that rheumatism is not the disease in which they are most obvious. We admit that we have not given it so much in this and congeneric diseases as in those of a more exclusively strumous nature, but our experience leads us to concur with the opinion, " that by far the majority of cases of chronic gout and rheumatism, particularly in adults, will not own the oleum jecoris aselli as a radical curative means"(*a*). Probably, as Dr. Bennett has hinted, its remedial effects depend very much upon the exact discrimination of the cases suitable for its use. Dr. Bradley found it to be most efficacious in the chronic rheumatism of elderly persons, when the muscles and tendons have become rigid, and the joints nearly inflexible, in consequence of the disease having been brought on by excessive labour, hard fare, dampness, and cold; and in women whose constitutions have been worn out by repeated rheumatic attacks after parturition, and more especially in the decline of life. Yet this able physician, while admitting that in some cases, after everything else had proved unavailing, the most astonishing benefits were derived from the oil, observes, " that it frequently failed in some of the mild and more common rheumatic affections."

Dr. Bennett, whose observations on this part of the therapeutics of the oil we would especially commend to the notice of our readers, still further specifies the forms of rheumatism in which it is most serviceable. He denominates them: first, the general; second, erratic; and third, local forms. In the first he places

" Those cases where the gout or rheumatism appears to have seized upon the whole system, and where, in the result of long suffering, the body is wasted, the process of nutrition very low, there is want of sleep, loss of the vital powers, peculiar cachectic expression of countenance, and contraction of the muscles."

Of the benefit of the oil in this form he gives a case from Brefeld, and one from the practice of Dr. Frech of Baden Baden. The cure in the latter case was effected in ten days.

In the second or erratic form, the pains are less violent and

(*a*) See the analyses of the treatises of Klencke and Pancke in the fourteenth volume of the British and Foreign Medical Review.

the movements of the affected parts, although restrained, are not abolished. Usually only certain portions of the limbs are affected, which are sometimes disposed to be œdematous. The pains and swelling are often changeable, and undergo exacerbation at night and in damp weather. This affection, popularly called flying rheumatism, is also attended with general cachexia and suffering, loss of appetite, &c. In such cases, according to some physicians, the cod liver oil is *infallible*, its external use being often conjoined with its internal administration. We cannot give much credit to Dr. Bennett for having offered *proof* of the benefits of the oil in this form.

In the third the affection is confined to a single part, and is of a more acute nature than the preceding, being generally induced by an improper or inert mode of treatment during the acute attack, or a continued exposure to the causes which originally produced it. Its use in this form is well illustrated by two cases. The first is described as "chronic lumbago, succeeding an acute attack; *scrofulous constitution;* state of cachexia; moxas and blisters without effect; ol. jecoris aselli: cure in three months." The second as "chronic lumbago of several years' standing; difficulty in walking; cachexia with œdema; ol. jecoris aselli: cure in seven months." In both cases, remarks Dr. Bennett, the general constitution had suffered, and a highly cachectic state been induced; that state, indeed, in which the oil, from experience, has been found to be so beneficial.

Some excellent observers have denied any efficacy to the oil in pure neuralgia. Professor Romberg, of Berlin, never found it of value in a case of undoubted neuralgia; but here the difficulty of discriminating the exact nature of the case must be taken into account. De Jongh makes some excellent observations upon its use in cases of true palsy dependent upon rheumatism of the sheaths of the nerves, occurring in a rheumatic diathesis, and excited by atmospherical influences, as by cold. This author believes the oil to be most powerful in these cases, when the disease has not lasted too long, and when there exists no permanent lesion in the diminished space of the nerve-sheath. There can be no doubt that sciatica is, in a great majority of cases, a real inflammation of the nerve-sheath, occurring chiefly in persons of the rheumatic diathesis; and though, when vigorously treated by local antiphlogistic means and mercurials at its first onset, not generally a very unmanageable affection, yet, when occurring in weak and cachectic subjects, sufficiently often embarrasses the physician to render him very willing to accept a remedy, whose merits have been so highly extolled in

rheumatic diseases, as the oil(*a*). De Jongh adduces several authorities in favour of its use in this disease; and Dr. Bennett records a case of great interest, where, after cupping, mercurial ointment, and blisters, had been used without effect, and the affected limb had become atrophied, the cod liver oil was attended with the best effects, the patient being able in six weeks to resume his duties. We can also bear our testimony to its occasional great benefits in this affection; but it has more frequently in our experience *proved of no service*, possibly owing more to a difference in the nature of the cases than to any other cause. It is certain that there is no disease, or rather symptom, dependent upon a greater number of entirely distinct pathological causes, than sciatica; a circumstance connected with the diagnostic difficulties of this and allied disorders which should make us "pause before we form a rash opinion, either confirmatory or condemnatory, of its alleged therapeutic properties."

Concerning the use of the oil in gout it is at present impossible to form an accurate opinion. The most diverse conclusions have been arrived at by the German physicians; and we believe it has been scarcely used in this country to a sufficient extent to warrant any very strong statement upon the question. We must leave it, therefore, as Dr. Bennett did nearly ten years ago, *in dubio*. We shall only state our belief that its use will be found to be beneficial in certain cases only of the chronic form, and, for the most part, when it occurs in worn-out constitutions.

Looking at the present evidence concerning the use of this oil in rheumatism and allied affections, we think it is pretty evident that *selected cases* only are susceptible of its remedial influence; that it is by no means of general, or, so to speak, of indiscriminate value; that it is entirely contra-indicated in general fever; that it generally relieves most where rheumatism exists in a scrofulous diathesis, or in a cachectic habit of body(*b*); and that those who give it the fairest trial will soon,—as Dr. Bennett, in the Appendix for 1847, informs us of his own practice,—confine its use to cases of *very chronic rheumatism, attended with emaciation.*

As an anti-strumous remedy it is scarcely possible to exag-

(*a*) We must not omit to mention that Dr. Seymour, in his excellent essay on sciatica, has excluded the oil from any pretensions to being remedial in that disease.

(*b*) See in De Jongh's treatise the German translator's opinions upon this question, page 85. It is remarkable that in their general summary of diseases benefited by the oil, neither Klencke nor Pancke mentions rheumatism. See the analysis of their treatises before referred to.

gerate the merits of the oil. All authors, whether British or foreign, who have tried it, are agreed that in this point of view it possesses the highest powers. We believe, with Brefeld, that there is no remedy which at all approaches its therapeutic properties in scrofulous disease. It is an undoubtedly powerful medicine, operating in a peculiar specific manner, and affording relief in cases which, to all appearance, and according to former experience, were beyond the reach of medicine. While there are certain forms and stages more benefited by its use than others, it is clearly proved that there is no form or stage which entirely resists its influence. This is high praise of any individual remedy; and when our readers reflect that we are speaking of its efficacy in forms of disease hitherto the very opprobium of medicine, lying, most certainly, at the base of our want of success in the treatment of one-half the maladies which are submitted to us, whether as physicians or surgeons, they will, we fear, think less of the virtues of the remedy than of the extent of our credulity; but we must be content to undergo the penalty of the imputation until they follow our example by testing the matter for themselves.

The first question discussed by De Jongh is in reference to the value of the oil in the *scrofulous diathesis*, but upon which he affords us no very satisfactory information. He quotes Brefeld's statement, without comment, "that it completely eradicates the first trace, and removes the disposition, when it is not hereditary; which, when it is, it only alleviates to a certain extent: it also prevents the development and formation of disease." A little further on are quoted authorities holding an entirely different opinion to that of Brefeld. It is in general a delusion to imagine that *tendencies* to diseased action are remediable by drugs(*a*). If the circumstances of the case render it probable that inflammation will come on, no amount of mercurialization or blood-letting will prevent it. Every one has seen iritis commence in a salivated patient. We may assert that Indian hemp and prussic acid will never prevent the supervention of hydrophobia, no more than *coup sur coup* blood-letting has prevented that of pericarditis in rheumatism. It is true that this latter treatment has *an effect*, but precisely in the opposite direction to that indicated by Bouillaud. At present

(*a*) It must not be forgotten, however, that the oil is to be considered as something more than a mere drug. Unlike any other medicinal agent, it is also an important article of diet: it enables us to administer a fundamental element of the human body in an easily assimilable form, a consideration of great weight against the arguments in the text, in reference to its use as a prophylactic in the scrofulous diathesis.

our drug powers are limited to actual disease. We cannot put in motion our forces too soon after its commencement, but its *actual existence* is a necessary preliminary(*a*). Yet while such reasoning as this should strike the least reflecting, and though we shall not affirm that it is positively necessary to dose every fair-haired, blue-eyed, soft-skinned child with the cod-liver oil, because he happens to have such and such physical characteristics; we believe that Brefeld has not erred in stating, "that it removes the disposition when it is not hereditary." There is a proneness to the *generation* of the strumous diathesis, and to the characteristic products of that diathesis, after certain maladies,—typhus fever, and the exanthemata in general,—after long illnesses of any description, particularly if, during their treatment, mercury, blood-letting, and other powerful agents have been resorted to,—a proneness which, unless timely checked and carefully treated, leads more surely to the full development of true tubercular disease than the hereditary constitution itself. There is no fact more often forced upon our attention than the origin, by steps, for the most part easily traceable, of organic diseases, and more especially those dependent upon tubercular exudation, from the sources just named. It is in such conditions, so arising, that we think the cod liver oil of special benefit. Often have we seen it gradually and firmly rebuild the shattered frame, add new power to the decaying *vis vitæ*, and so obviate the forward progress of incurable organic degeneration. If, therefore, such cases are included in the general observation of Brefeld, we must express our hearty concurrence therewith.

The different forms of scrofula, meaning by that phrase actual diseased conditions, more or less dependent upon the strumous diathesis, have been well enumerated by Dr. Bennett, who properly observes that the fact of its appearing in different individuals in various forms, but being still essentially the same disease, accounts for the benefit derived from the oil in what may at first appear widely different maladies. This author states, that he has observed the oil to be least beneficial in external glandular swellings, more particularly if ulceration have not commenced. On the other hand, De Jongh believes "that it is a certain and undoubted remedy in this form; but in order to correct the scrofulous disposition, and to effect a perfect cure, it must be given for a long period;" and with this opinion

(*a*) Since these observations were written we have seen some good remarks in the same direction, by Mr. Critchett, in the London Medical Gazette for April 5th, p. 578.

our experience leads us entirely to concur. He recommends the external use to be conjoined with the internal administration.

Both Bennett and De Jongh adduce the strongest evidence in favour of the oil in "Atrophia Mesenterica." The former author states that it appears to be the only means of cure at present known; and several years afterwards(*a*), having enjoyed extensive opportunities in the interval (at the Royal Dispensary of Edinburgh) of seeing this malady among the poorest people in the city, expresses his belief that in no disease are the effects of the oil better marked. Brefeld(*b*) says:

"Cod liver oil cures this affection in all stages, when the powers of life have not been reduced too low. Care, however, should be taken that it should not be confounded with other forms of disease, as ulceration of the bowels, dropsy, &c. By its valuable aid it has often happened that I have been enabled to snatch from the yawning grave the little sufferer."

He strongly insists upon its external application, namely, the daily, often-repeated rubbing in on the tumid belly, being conjoined with its internal use. If the belly is not very sensitive, he recommends a camphorated liniment to be prepared, in which cod liver oil is to be substituted for common oil. In all parts of the treatise before us, this physician is reported to recommend its external use; and of its benefits so applied there is good reason to hold the highest estimate. Hitherto, in this country, it has not been used, in the manner indicated by Brefeld, to the extent it deserves. Of its virtues, when internally administered, in this fatal disease, there can be but one opinion among those who give it a fair trial. We have seen children in its earlier stages so quickly relieved of the bad symptoms,—so soon lose the old, withered aspect characteristic of the disease,—that we are forced to agree with the writers just named, in regard to its great powers. Many cases will resist its influence, many will be only temporarily relieved, another phase of the constitutional taint appearing, to baffle, decisively, all the efforts of the medical art; but has not all this occurred,—not often, but universally,—under any other treatment. All we wish our readers to understand is, that a fatal termination occurs immeasurably less frequently when the cod liver oil forms the chief element of the means employed, than under any other form of treatment that has ever been devised. Tabes mesenterica is, perhaps, more often an *acquired condition* than any other form of tubercular disease. To this opinion we have

(*a*) Appendix, p. 188. (*b*) De Jongh's Treatise, p. 98.

been led by its frequent easy traceability to the acknowledged causes of scrofula,—improper or insufficient food, damp houses, &c. &c.; and by our belief that, compared with other scrofulous maladies, it is far more frequent among the poorer than among the richer classes. Whether this consideration serves to account for the efficacy of this particular remedy or not, is not of so much importance as the fact itself; but the more or less tendency to a particular form of disease under certain fixed conditions, hereditary or otherwise, appears to us worthy of the most careful inquiry.

There is no form of struma(*a*) more difficult to manage, and which more generally runs its course almost uncontrolled by medicine, than rachitis. It is the opinion of De Jongh(*b*),—and this opinion is better supported by his cases than any other he has advanced,—that, whether it be at its commencement, or whether it be at its height, the cod liver oil will supersede every other means of cure in this affection, and will accomplish whatever can be expected or hoped for from any medicine. He quotes a Dutch physician, Pruys van der Hoeven, previously much prejudiced against the oil as being set up in opposition to steel whose virtues he had tested, but who, after experience of its value, confessed that he knew of no remedy against rachitis which at all approached it. But Brefeld's description of its operation, after treating upwards of a hundred cases of rachitis with the oil, is so excellent that we shall give it entire from De Jongh's Treatise:

"The healing virtue of the cod liver oil, in this form of disease, is as incredible as it is unlimited in its effects. Even in the very extremity of life, where the patient appears to be sinking, and death is inevitable, it affords relief as a matter of certainty. I know nothing to controvert this, except an intervening attack of acute fever, and the termination of life,—the death-struggle itself. It moderates slow fever and diarrhœa as well as the other symptoms of rachitis, which, one after the other, are gradually dispersed. It improves digestion and the consequent nourishment of the body, the motions becoming regular, and of a darker colour; the tumid belly softens, and diminishes in size as the emaciated extremities begin to recover their rotundity. The old features become again natural and childish; the skin moist and browner; the powers of life are restored; the eyes are again full of life and brightness; the slow fever disappears; the childish gaiety establishes itself again, with a return of healthy, sound sleep, and removal of that anxious

(*a*) We think Dr. Bennett is borne out by experience in saying that rachitis is not always a scrofulous disease. See p. 101.

(*b*) Page 99.

nightly starting and shrieking, which render the night so wretched to the infant; with the increasing strength, the desire and ability to stand and to walk return. The unnatural state of the bones,—both in form and strength, by degrees is corrected; the discoloured, shaking teeth become firm and improved in appearance; the bones lose their flexibility, and the epiphyses are no longer enlarged; the deformity does not increase, but, on the contrary, is more or less repaired by the powers of nature and increasing growth, although there are some remains which are not entirely effaced. As an anthelmintic, the cod liver oil is a most excellent adjuvant, by which the nests of worms found in the tumid belly are dislodged, both mildly and effectually. The internal use of the oil is in itself sufficient to effect a cure in rachitis, in from three to four months, if you allow somewhat more for the repair of the newly formed bones. Cleanliness, regular diet, and regimen, as well as warm baths, will expedite the cure; while, on the contrary, unfavourable circumstances, however slight, will equally retard it."

Want of space alone prevents us from giving the admirable description of the effects of the oil in this disease by Dr. Steinhaeuser, of Heidelberg, as quoted in Dr. Bennett's Treatise; but its exact agreement with that of Brefeld renders this to be the less regretted. Considering the evidence of its remarkable effects in rachitis, adduced by so many competent observers, it is not easy to resist his conclusion: "that it has a powerful and deep influence on the human economy in general, and the osseous tissue in particular"(*a*). With a view to treatment, Dr. Bennett divides rachitis into two forms, which he denominates, respectively, simplex and scrofulosa. In the first form the children are strong, fat, and have a healthy external appearance, only the anterior fontanelle remains open; they have few teeth, and sometimes the epiphyses of the long bones are thickened. In the second form, in conjunction with the latter symptoms are more or less deformity of the osseous system generally, there is always a cachectic constitution, the child appearing to be improperly nourished, and presenting all the appearances of scrofula. In the first form, Dr. Bennett believes the cod liver oil is inert, but in the second its beneficial operation is most striking. This distinction is probably well founded, and of still wider application. Apart altogether from speculations as to the *modus operandi* of the oil, experience appears to favour the idea that its benefits are the greatest when there is a palpable deficiency in assimilating power, as evinced by emaciation and general cachexia.

In other affections of the osseous system, particularly in

(*a*) Page 103.

scrofulous caries, the oil has been found of the utmost service, obviating, apparently, the necessity for amputation in the worst cases. We must refer our readers to the individual treatises for copious information upon this point. Surgeons are now pretty well agreed that caries of bones is not susceptible of cure by any local measures. We believe the application of blisters and moxæ, in quick succession, in scrofulous caries of the heads of bones, to be the best mode that can be devised to bring the patient quickly to the operating theatre. These modes of attacking the disease are founded upon an altogether erroneous pathology. They have not even the same apology for their use as the physician for the application—very moderate application indeed—of blisters to the intercurrent pleurisies of tubercular lungs; for in the former case the surgeon can command the best of antiphlogistics, namely, *rest*. We believe successful treatment can only be obtained here by the most careful general measures, directed to the improvement of the assimilating processes. These are, indeed, the very cases which we should, *a priori*, have imagined would be benefited by the oil, granting any virtues at all to it. Experience amply bears out this opinion. In scrofulous caries of the vertebræ, the mightiest weapons in the surgeon's armoury are weak in comparison to the combined effects of rest and cod liver oil.

There is no form of scrofulous disease which has not been treated by the oil, externally or internally used, or both combined, and in no form has it been proved to be entirely inefficacious. In the treatises before us we find that divers strumous eruptions, or, perhaps more properly, eruptions taking place in strumous constitutions, have not resisted its magical(*a*) powers. We find mentioned impetigo, eczema, some scaly eruptions, and even tinea favosa, as having been quickly and *safely* cured by it. We have used it in several severe cases of the crusta lactea of young children with the most marked benefit. In many of the cases reported it was applied externally, and was considered, when thus applied, very much to expedite the cure. We have had no experience of its external use in the other eruptions, chiefly, it must be confessed, because we have found so much benefit from weak alkaline lotions, when we have thought a local application necessary. There are some stages of these eruptions that we should have imagined likely to be injured by the oil, merely considered as an unctuous application.

(*a*) We are using here but an often-repeated epithet in the records of the reporters of its effects.

Strumous corneitis, granular lids, scrofulous ulcers, malacosteon, and various other phases of scrofula, have been submitted by different physicians to the treatment with the cod liver oil; and we repeat that in different degrees all have been susceptible of its remedial powers; but for evidence upon these points we must again refer our readers to the treatises themselves. There is one form of struma which we must not so pass over, we mean "phthisis pulmonalis." The evidence of the value of the oil in this disease has recently so rapidly accumulated, that the attention of the profession seems almost exclusively fixed upon it as an *anti-phthisical* agent. We deeply regret this circumstance, being strongly convinced that already an exaggerated estimate is formed of its powers in this disease, great as they really are; and being equally strongly persuaded that, if found to disappoint too sanguine expectations in this instance, the profession will soon follow the steps indicated at the commencement of this article, and deny *any merits* to the remedy in the forms of disease we have just discussed, in which its value is unimpeachable.

The evidence offered by De Jongh, as regards the effects of the oil in phthisis pulmonalis, is very unsatisfactory; in fact, it can only be considered as giving a general confirmation of the observations of other authors. He quotes a number of authorities, all certainly tending the same way in reference to its value; but, from all we find related of the cases, it is doubtful if they were really cases of genuine tubercular disease. He appears to have somewhat distrusted this evidence himself, for he considered it worth while to collect the opinions of some of the most celebrated Dutch physicians, with whose answers he favours us. We have no higher praise to give *their* statements; they cannot be allowed as *actual proof* of the good effects of the oil. One case only, given by Schröder van der Kolk, is so reported as to leave but little doubt that it was one of genuine tubercular phthisis. An observation, by Suermann, we think is useful to extract, as it states one merit of the oil, of a negative character, that should not be lost sight of:

> "Independent of the real value which this remedy possesses, it has been the means of supplanting those of a more dangerous nature, and of preventing the public from using others, which were both new and contra-indicated in phthisis."

We thought we were arriving at some satisfactory details when we commenced the perusal of Haller's experience in the Imperial House of Correction, in the lower Austrian provinces. This physician is reported to have given the oil in seven cases

of tubercular affections of the lungs. But when, upon reading the *post mortem* examination of one of these cases, we found it stated that there was *total destruction of the lungs*, we began to doubt whether possibly his sense of hearing might not have been as imperfect as his visual powers. It is remarkable that De Jongh, among his eighteen fully recorded cases, gives no example of phthisis treated by the oil. Upon turning to the appendix, by Dr. Carey, the want of sound evidence is not satisfied. The first case of "phthisis" was clearly at its origin, one of pleuritis of the left side; and the physical signs, in a subsequent stage of the disease, are given so loosely that no definite conclusion can be arrived at. Dr. Carey should have known that it was of the first importance to state how much, *if any*, of the right side,—the respiration on this side being described as puerile and bronchial,—*was dull on percussion.* The concluding observation, that "considerable change has taken place in the right side, the respiratory sounds assuming a more healthy character, the left lung remaining impervious to air," only makes the whole case wear a still more doubtful aspect. The second case is termed "incipient tubercular phthisis." Here the history strongly favours the opinion advanced by Dr. Carey. But, when we find the following most ludicrous account of the physical signs,—"chest was dull on percussion; respiration highly puerile; heart sounds audible over the whole precordial region,"—we pause ere we take his authority upon a matter of such grave moment. We make these strictures with great reluctance, for Dr. Carey deserves well of the profession for the translation of De Jongh's treatise. From this very appendix we entertain a very favourable opinion of his abilities, though we are compelled to mark his deficiencies in this all-important point.

Dr. Bennett's section on phthisis deserves the closest attention. It was considered unsatisfactory by contemporary critics, but upon what foundation we are at a loss to understand. He sets out with the observation that we possess ample proof that tuberculous cavities in the lungs are susceptible of cicatrization(*a*) and makes the inquiry, why may not the remedy, which has been found capable of curing tubercle in the bones and mesenteric glands, operate also favourably when tubercular deposition has taken place in the lungs? He proceeds to quote some German authors,—the same, for the most part, as those quoted

(*a*) See on this point an essay by Dr. Bennett, in the Edinburgh Medical and Surgical Journal, April, 1845, entitled, "On the frequent spontaneous Cure of Pulmonary Consumption, and the Indications furnished by Pathology for its rational Treatment."

by De Jongh in favour of the oil. Asinus appears to have cured with the oil a man who presented the symptoms of consumption, with an excavation in the apex of the right lung, *as proved by the stethoscope.* Dr. Wolf, of Berlin, informed Dr. Bennett that he had found the oil of great service in the second stage, but neither he nor Professor Schönlein had noticed any benefit in the third stage, where caverns exist in the lungs, and extreme emaciation, hectic, and prostration are present.

The first of Dr. Bennett's cases was one of "hemoptysis,—irritating cough of four years' standing,—hectic fever." The subject of these symptoms was twenty-six years old, of strumous habit, and suffered profuse sweatings, with occasional returns of hemoptysis, for four years. In a few months after commencing the use of the cod liver oil, the cough and hemoptysis left him, and his strength returned. From the want of physical signs, this, were it an isolated case, would evidently be of little value, as Dr. Bennett himself remarks. The next case is more satisfactory. A carpenter, aged 28, of a scrofulous family, was seized with a severe attack of pneumonia, attended with *violent spitting of blood.* Under treatment the inflammatory symptoms and hemoptysis disappeared, but the cough and a certain amount of feverishness remained. After several weeks, great wasting came on, attended with sweats, considerable cough, some degree of œdema of the feet, and profuse expectoration. Percussion discovered nothing; auscultation gave evidence of mucous and submucous râles in the superior third of both lungs; and in the right fossa supra-spinata the local resonance was much louder than in the left. There were well-marked hectic fever, profuse sweatings, and frequent teasing cough, with roughness in the larynx. All the ordinary remedies were tried, but the digestive functions became deranged, and his whole condition so bad, that it seemed evident that a fatal termination was drawing near. He was now given the cod liver oil, in doses of two ounces daily, afterwards increased to four ounces. An amendment soon became perceptible; all the symptoms gradually disappeared, and in three months after taking the remedy he was perfectly restored to health.

The third case is one of advanced phthisis, occurring in a boy seventeen years of age, with hereditary predisposition. A large vomica was clearly made out under the right clavicle. There were extreme emaciation, profuse night sweatings, want of appetite, and the other symptoms common in this advanced stage of the disease. He was ordered to take the cod liver oil three times daily, in table-spoonful doses. His appetite began to improve; his strength increased; the night sweatings disap-

peared; so that in eight weeks the patient seemed to be quite another individual from what he was when he entered the hospital. He now appeared to have received from the oil all the benefits it was capable of bestowing. At this time every dose occasioned nausea, and took from him all appetite, so that it was discontinued. After two weeks it was again given in smaller doses, but without producing its former good effects, and the patient gradually fell into the state in which he first entered the hospital. Dr. Bennett well remarks that, "had the physician been acquainted with the necessity of not overloading the system, attending to the state of the digestion, and, when this appeared to be deranged, of giving other tonics, he might have ultimately recovered." This observation contains a valuable truth. We have ourselves generally desisted from the administration of the oil, when, after taking it for some weeks without any discomfort, the patient begins to complain of nausea or loss of appetite. No assumed benefit of the oil can counterbalance the injury caused by the production of these symptoms. When they have been subdued,—not very easy to be compassed it must be confessed,—we have usually found no great difficulty in its re-introduction into the system.

The fourth case is that of a servant, aged 35, of a scrofulous constitution. The expectoration was bloody and purulent; sweating profuse; considerable cough. All the symptoms of hectic fever followed one after another. She was also suffering from caries of the olecranon process. Auscultation detected cavernous respiration under the right clavicle, with dulness on percussion. The oil, when first given, produced vomiting, on account of which it was suspended for a short time, but it was re-prescribed and steadily persevered in. The sweating disappeared; the cough and expectoration were diminished; the cachectic appearance of the patient much improved, and she daily regained strength; the discharge from the ulcer on the elbow became less and less, and finally it healed, the cicatrix being densely united to the bone. Some eight or nine months afterwards Dr. Bennett examined this patient, and found that though the elbow-joint was permanently bent at an obtuse angle, she could perform rotation and supination of the fore-arm. He was unable to detect, either by percussion or auscultation, anything abnormal in the chest. This will be admitted to be a highly instructive case, and proves that the oil acts upon the local lesion, whether of the bones or of the lungs, through its operation upon the general pathological state of the system.

The subject of the fifth case is a boy, of a highly scrofulous constitution, who at the age of seven was attacked with marked

symptoms of phthisis. The oil was administered for twelve months; he lost all cough, and, towards the end of his eleventh year, enjoyed good health. Six months afterwards he was attacked with pleuritis of the left side. At this time auscultation detected at the summit of the left lung cavernous respiration, with perfect pectoriloquy; no cavernous rattle. In the course of some weeks another attack of pleuritis came on, followed by hypertrophy of the heart and dropsy. Great exhaustion supervened, and death followed. In the left lung, near the summit, was a cavity, about the size of a walnut, quite empty. Its inner surface was dry, and of a dirty brownish colour, somewhat resembling that of a smoked ham. Its walls were not lined by any adventitious membrane, but were composed of the substance of the lung in a condensed and considerably indurated state. Neither in the neighbourhood of this cavern, nor in any other part of the left lung, were any traces of tubercle to be found. The whole of the right lung was studded with tubercles, from the size of a pea to that of a bean. Dr. Bennett, from all the facts of the case, concludes that the cavity, discovered in a healing state in the left lung, belonged to the phthisical condition which existed eighteen months before his death; that the disposition, which this morbid change usually possesses, of advancing to a fatal termination, was most probably checked by the administration of the oil; but that a continued exposure to the exciting causes induced a return of the disease, which attacked the opposite lung, and which terminated in death.

That these five cases offer the strongest support to the opinion of the great value of the oil in phthisis pulmonalis, will only be questioned by those who *will* see nothing proved by their predecessors in medical inquiries. Yet the author of these cases was not led into error as to the *limits* of the value of the remedy. His remarks, indeed, upon this point, so clearly embody our own ideas that we shall extract them at length, premising only that they afford proof that Dr. Bennett did not consider he was recommending an infallible panacea when he wrote his treatise:

"No doubt great caution is necessary, not only in admitting the curability of this disease by any therapeutic means, but also by this remedy in particular. All that is here contended for, however, is simply that enough has been stated to warrant its further trial by the profession. Nothing is further from my intention than exciting exaggerated ideas of the benefits of this substance, either in phthisis pulmonalis or in other forms of scrofulous disease. Nothing is so fatal to the introduction of a new remedy as this; and truth compels me to state that I have seen other cases where the administra-

tion of the oil has only produced slight benefit, or none at all. But there does not exist any one remedy which is infallible, and much less is it to be expected that in the disease under discussion, which has been universally allowed to be one of the opprobria medicinæ, invariable success can follow the employment of any remedy whatever. From such a rash conclusion, a knowledge of the present state of medicine must guard every enlightened practitioner. If, however, it can be shown, as I have endeavoured to do, that even a few cases may be snatched from the almost certain fatal termination to which they are at present allowed to proceed, the discussion of this subject will not have been altogether useless"(*a*).

Unquestionably the most important recent addition to our knowledge of the value of the oil in phthisis is the paper of Dr. Williams, to which we have already alluded. He has given us eleven well-reported cases, selected from a great number proving the same fact, in which the oil was administered with indubitable benefit. In some of these cases the general health became perfectly restored, while the further progress of disease in the lung was arrested. In others the benefit was well-marked, but temporary. He remarks that out of 234 cases, the oil disagreed, and was discontinued, in only nine instances. In nineteen, although taken, it appeared to do no good, whilst in the large proportion of 206 out of 234; its use was followed by marked and unequivocal improvement. Want of space compels us to refer our readers to the paper itself for details of the cases. They will find also, in Dr. Turnbull's paper, several instances of the great benefit of the oil, whence that physician has drawn the conclusion, that phthisis is not an altogether incurable affection. His deduction, as we have seen, is not new, and his cases, were they the only ones on record, would tend, though probably only to a very moderate degree, to its establishment. We would not disparage either the merits or the industry of the author of this paper; but we are constrained to mention the looseness with which he has reported the physical diagnosis of his cases. At this stage of the inquiry, it is a capital defect, not to be atoned for by excellencies of any description.

What we want is perfectly obvious: it is an accurate record of cases where the disease was made out by a rigid physical diagnosis, and *noted at the time the oil was first administered.* At frequent intervals in the course of years, both during and

(*a*) Some admirable remarks, tending to the same conclusion, will be found in the most recent contribution of Dr. Bennett upon the subject of the treatment of phthisis, in the March Number of the Edinburgh Monthly Journal for this year.

after its administration, these cases should be subjected to a careful physical examination, and the progress, whether towards cure or the contrary, fully reported upon, and made known to the profession.

The great merit of Dr. Williams' paper consists in, that he has given us cases where the disease was fairly made out, and that he has supplied us with data towards the formation of an accurate conclusion as to the real merits of the oil, by recording the results of his examinations subsequent to its first administration. When we seek for information upon the kind and degree of improvement effected, we find a great deal that is excellent; in truth, we do not think that Dr. Williams has stated anything concerning the effects upon the local lesion or the general health that is not fully borne out by the experience of all who have tried the remedy. This part of the subject has been briefly handled by Dr. Bennett in the Appendix to his Treatise, published in 1848; briefly, it is true, but with such singular closeness to the actual facts, in both the points of view just named, that nothing was reserved for Dr. Williams to discover. We assert, without the smallest hesitation, that there is not even the shadow of a *fact* recorded in the paper before us, that had not been *foreshadowed* by the Edinburgh Professor. We have certainly fallen upon some reasoning here, of which we had no previous intimation, such as—

"If my views of the chemical nature of suppuration, that it consists of a further oxydation of the exudation corpuscle, be correct, then it is quite intelligible that the presence of so highly combustible a material as oil must check this process of oxydation, and thus prevent the degeneration of the corpuscles into the aplastic state of pus-globules"(*a*).

But if this be not simply ridiculous, when we consider the compound nature of the cell, it is so perfectly gratuitous as an hypothesis, so entirely unnecessary as an explanation of the effects of the oil, that we have only to say of this and the like reasonings, that it is a source of congratulation to us that they are Dr. Williams',—that they have no other paternity, at least that has been yet discovered. Those of our readers who wish further information upon the effects of the oil in phthisis, will probably, from its being so easily accessible, consult the paper of Dr. Williams: for this reason, as well as on account of the brevity yet comprehensiveness with which Dr. Bennett has described its effects, we prefer to quote the Appendix of this author:

(*a*) Page 15.

"The effect of the oil in many cases is very striking, and is well seen in hospital and dispensary practice. Individuals presenting the emaciation, profuse sweats(*a*), constant cough and expectoration, as most prominent symptoms, with a degree of weakness that prevents their standing alone, after a few weeks' use of it are enabled to get up with ease, and walk about, with a visible improvement in their general health, and an increased amount of flesh. The physical signs of the disease may continue unaffected for some time, but if the treatment be continued, the moist gurgling râles are exchanged for dry blowing sounds, which become more and more persistent; pectoriloquy is merged into bronchophony, the respiration is easier, and a check is evidently given to the ulcerative process, and the formation of purulent matter in the air-passages. In this state patients often feel themselves so well that they insist on leaving the hospital. I have frequently found it impossible to prevail on such persons to continue the treatment, and the consequence is, that again returning to their often unhealthy employment and bad diet, and exposed to the other causes favourable to the production of the disease, the distressing symptoms again recur. Several cases, with one or more caverns in the lung, have in this manner returned to the infirmary from four to seven or eight times during the last six years, and on each occasion have gone out, in their own opinion, perfectly cured. Notwithstanding the difficulties which have presented themselves in bringing about a complete cure of the disease, I have succeeded in several cases in ascertaining that the caverns have completely healed up, every symptom and physical sign indicating their presence has disappeared, and there has remained only slight dulness on percussion, and increased vocal resonance, as a proof of the puckering and induration of the pulmonary parenchyma attendant on the cicatrix. I do not say that this has been entirely owing to cod liver oil; but it has seemed to me probable that if this substance had not been given at the commencement of the treatment, the constitution would never have rallied from the state of exhaustion and depression under which it laboured."

We caution those perusing for the first time the accounts of the remedial properties of the oil, against the notion that it is used to the exclusion of all other remedies. Symptoms, as they arise, must, of course, be treated according to received rational principles. It is important in some cases to keep up a moderate counter-irritation, to effect which there is probably nothing so advantageous as the stimulating liniment composed of strong acetic acid, with a little acetum cantharidis, as recommended by Dr. Williams.

(*a*) In another place he observes that "no remedy has so rapidly restored the exhausted powers of the patients, improved the nutritive functions generally, stopped or diminished the emaciation, checked the perspiration, and quieted the cough and expectoration."

Other means besides counter-irritation will be found of use to relieve the varied symptoms that may occur during the administration of the oil; but, as Dr. Williams well observes, they are to be regarded now chiefly as subsidiary means, and the more likely to be useful in proportion as they facilitate the exhibition or continuance of this superior agent.

There has been a great discrepancy of opinion as to the stage of phthisis when the oil is most serviceable; the majority of the authorities quoted by De Jongh holding that it is absolutely useless when hectic fever, emaciation, and sweating, are present; an opinion Wolf and Schönlein (as quoted by Bennett) seem to share; while others, among whom is Dr. Williams, believe the most striking instances of the beneficial operation of cod liver oil in phthisis are to be found in cases in the third stage, where these symptoms have supervened. That the oil does produce the most extraordinary and rapid improvement in such cases we have had very satisfactory experience. If it did nothing more than check the perspirations and profuse expectoration of this stage, it would well deserve the high eulogium of Dr. Williams, that, "even as a tardative or palliative in phthisis, it ranks far above any agent hitherto recommended." But we hardly think it necessary to argue that, if it produces a retardation or complete cessation of exudation in the lung, and decisive improvement in the general symptoms accompanying this stage, it must produce still greater benefits in the earlier stages, though not so rapidly and obviously manifested. We fortunately possess a document in proof of this point, which no one can gainsay, namely, the valuable Report of the Consumption Hospital at Brompton(*a*). From this it appears that arrestment of the disease was pretty directly proportioned to the earliness of the stage when the use of the oil was commenced. Taking a general view of this point, we may state that, while we must always expect to obtain more permanent relief the earlier the oil is administered, the best evidence at present (Bennett and Williams), should encourage us to hope even for marked and decisive benefit in the advanced stages, although attended with the most formidable symptoms.

The opinion so frequently advanced by those who have given us their experience of the oil, that it is contra-indicated during the presence of diarrhœa, requires certainly to be accepted with considerable modification. Dr. Williams has not found "colliquative diarrhœa" incompatible with its beneficial operation. The subject of his first case laboured under this

(*a*) See the Analysis of this Report in our last Number.

symptom; but it did not prevent the administration of the oil, or the rapid production of its remedial effects. The first time Dr. Williams saw the patient, he prescribed the oil simultaneously with a pill containing sulphate of copper, morphia, and creasote, to check the diarrhœa. When he was next consulted, although the oil was being taken in *six drachm doses* three times a day, the diarrhœa was not merely subdued, but it was even considered necessary to exhibit a mercurial aperient. Dr. Bennett places among the contra-indications to its use, diarrhœa "dependent on disease in the intestinal walls," and the German translator of De Jongh's Treatise, makes a distinction nearly of the same kind. After stating that some have regarded the cod liver oil as having a constipating effect, and others as an aperient, he remarks:

"That when the intestinal canal is quite healthy, it promotes the evacuations in proportion as it improves the appetite and the digestion; in chronic diarrhœa, on this account, it will always act favourably, whilst it decidedly increases diarrhœa arising from irritation(*a*). Should diarrhœa come on during the use of the oil, it should be suspended, in every case, for a considerable time."

These observations merit the notice of any one about to administer this remedy, for no symptom is more apt to embarrass the physician in the last stages of phthisis than the one we are discussing. We entirely concur with the experience of Dr. Williams on this point. The presence of diarrhœa should never be allowed to prevent us from giving the oil a trial, in small doses at first, and applying carefully the remedies required by the state of the intestinal canal, among which we give the chief place to bismuth, conium, pernitrate of iron, and, above all, opium. If the diarrhœa persist in spite of our efforts to check it, then we should advise the oil to be temporarily suspended. If this symptom appear for the first time after the oil has been commenced, and during its administration, we agree with the German translator of De Jongh, its withdrawal becomes unavoidable. Under these latter circumstances we have often attempted to persevere with the remedy, but in the great majority of cases without success. While we urge the most careful attention to this symptom, we wish equally to be understood as by no means counselling the too ready abandonment of the great remedy. If the physician becomes frightened at the supervention of this or that symptom, he will never suc-

(*a*) Dr. Bennett gives some sound practical remarks upon this point in his section "on the action of the oil on the human economy." See particularly p. 45.

ceed in benefiting his patient, either by this or by any other means. And here we would give the same counsel that is applicable to the whole range of our art: if a remedy of great and acknowledged powers be strongly indicated in a given malady, let it be administered, *malgrè* some opposing indications, even though they may appear to be caused by the remedy. We may check *these*, perhaps, almost infinitely; but we may possess but this one weapon against the production of organic incurable degeneration, against the tendency, possibly, to death. With such prospects, the physician must not fly in weak fear from drug to drug; he must not *wait*, that most fashionable error of modern medicine.

We have had abundant evidence, that in strumous children with tumid belly and irritable bowels, the oil restrains the undue action of the latter, while the colour of the evacuations is manifestly improved, as stated by Dr. Carey(*a*) in his Appendix. This author affirms that in some constitutions it produces diarrhœa, and refers to the custom in Holland of restraining it by acorn coffee, prepared of the same strength as ordinary coffee, and given two or three times a day.

Hemoptysis is another symptom which seems to be pretty generally considered as contra-indicating the use of the oil, but about which there is no very definite information in the Treatises before us. Our own rule has been, if a patient presents himself suffering *at the time* from decided pulmonary hemorrhage, to have recourse in the first instance to treatment calculated to check it, and, immediately the hemorrhage subsides, or is diminished to a marked degree, we commence the use of the oil, which we never think it necessary to withhold, even if the patient frequently during its administration complains of having streaks of blood in his sputa. To him who withholds it on this account, it will ever be a dead letter; we should advise him not to try it at all, lest by his own weakness the oil should be brought into disrepute. Our remarks concerning diarrhœa hold good here to a greater degree. The symptoms may be treated and checked, yet the oil be persisted in. We do not deny that cases every now and then occur, where the urgency of the hemorrhage renders it indispensable that the oil should be suspended, but these are the exceptions. In the great majority of instances this symptom need not interfere with its administration.

All authors agree, that when there is a disposition to inflammation this agent should not be used. Of course this process

(*a*) Page 166.

must be checked, as in all other cases, by the received anti-inflammatory means, and no one has pretended that the cod liver oil is, in the strict sense of the term, *an antiphlogistic.* That by adding vigour to the frame, and by its wonderful power of improving the chylopoietic and general assimilating processes, it does truly countervail the tendency to the development of inflammation, will not be doubted by those who appreciate the aptness to its production engendered in a cachetic habit. But that its employment induces pneumonia, as lately supposed, and so publicly stated by Dr. Benson of this city, we entirely discredit. When we consider, as Dr. Bennett has recently urged(*a*), that nothing is more common than to find after death more or less pneumonic condensation around tubercles; when too we reflect upon the difficulties in diagnosing during life, under the circumstances, a *genuine* pneumonia, which we presume Dr. Benson means, if he means anything; we feel called upon to express our regret that this physician should have made an observation so likely to prejudice the profession against a valuable remedy, without bringing forward irrefragable proofs of his surmises, which, we would suggest, are entirely misplaced in such questions. This "crying of the wolf" we earnestly deprecate, as a source of infinite injury to the progress of medicine.

It is impossible to withhold a partial assent to the opinions of some of the authors alluded to, in reference to diarrhœa and hemorrhage as contra-indicating the use of the oil; but when the German translator, so often mentioned, tells us of a "disposition to indigestion" as a valid reason for its non-administration, we are irresistibly brought to the conclusion, where his exceptions are so numerous, that his rule of giving it must be itself the exception. We shall not seriously argue with the learned translator, that this idea is a perfect delusion, but only state, we hope *not* for the information of readers, that as phthisis begins in indigestion, so throughout its whole progress indigestion occurs to a more or less marked degree; and that, "as the nutritive properties of the blood are entirely dependant on a proper assimilation of food, and as this assimilation must be interfered with in the morbid conditions of the alimentary canal, the continuance of such conditions necessarily induces an impoverished state of the blood and imperfect growth of the tissues"(*b*), if the cod liver oil does not relieve this primary evil, if it does not conduce to, rather than interfere with this "proper assimilation of food,"

(*a*) See his paper on the treatment of phthisis pulmonalis in the March Number of the Edinburgh Monthly Journal, p. 239.

(*b*) See Dr. Bennett in the same paper, p. 232.

it must at once be fairly allowed that the ascribing any therapeutic efficacy to it is nothing less than a gross blunder. If marked pain in the stomach, attended with nausea, furred tongue, and loss of appetite, come on during the time of its exhibition, the judicious practitioner will resort to the proper modes of checking these symptoms; but, in concluding our observations on this and other supposed contra-indicants, we cannot do better than quote some remarks from Dr. Bennett's Appendix:

"Most cases of phthisis pulmonalis, especially in the advanced stage, are attended with more or less dyspepsia, which renders the stomach irritable, causes total loss of appetite, and is often the cause that prevents nourishment from being taken. In many instances there is no difficulty in employing the oil under these circumstances, but in others it cannot be retained on the stomach. It will then be necessary to calm the irritability of the organ, and the best remedy for this purpose, according to my experience, is naphtha. It is to the power this substance possesses of preventing vomiting, and thereby allowing nourishment to be retained, that I attribute the advantages which have attended its use in the practice of Dr. J. Hastings and others."

Regarding the dose of cod liver oil authors indulge in considerable latitude. Klencke directs, as the smallest dose, to begin with three table-spoonfuls of the oil daily, which quantity may be increased to twenty per diem, or until the patient comes to live almost entirely upon it. The bare fact that oil alone does not afford nourishment will be sufficient answer to the opinions and practice of this physician. His belief that oil is converted into albumen in the animal economy gives a basis to his practice; but this is an error which the date of his treatise (1842) only partially justifies. Dr. Bennett, in his latest paper, gives a table-spoonful three times a day, as the common dose for an adult, which may often be increased to four, or even six, with advantage; but that when the stomach is irritable, the dose to commence with should be a tea or dessert-spoonful. In almost all of Dr. Williams' cases, when the dose is mentioned, it is a table-spoonful three times daily. In one case, the first, the patient during a part of the time, took six drachms, thrice a day. This physician appears to us to have exhibited it with great care and discretion, regulating it according to symptoms in the most judicious manner. We have rarely given it in larger doses than half an ounce, twice or three times a day, and this dose has been the exception. Our rule has been to administer but half this quantity; but we shall not pretend that had we given it in larger quantity we might not have obtained greater benefits, good reason as we have to be

satisfied with the results of the latter dose. In young children we should say that a tea-spoonful is a sufficient dose. Certain we are that there is a limit beyond which it is injurious to pass in the exhibition of this agent: it is not an indifferent remedy to be applied indiscriminately and indiscreetly, but with due regard to all the circumstances of the case.

We have very little to say upon the modes of getting rid as far as possible of the taste of the oil. We prefer giving it alone, and those who yield it a trial soon come to the same conclusion. They who administer it in the way of emulsion, mixture, &c., only increase the bulk, without effecting the object they desire. Ever since we first commenced its use we have ordered it to be swallowed pure, and washed down with a draught of milk or peppermint water, two remedies we see strongly praised by Dr. Andrew Wood of Edinburgh(*a*). The compound infusion, with a little tincture, and syrup of orange-peel, and sometimes the addition of a few drops of nitric acid, as recommended by Dr. Williams, would answer the purpose exceedingly well, and be, doubtless, very agreeable to the palate. To prevent nausea, and shorten the duration of the very disagreeable eructations recalling the taste of the oil, it is important to give it within an hour, or at most two (Williams) after the principal meals. With the same view we have often given it during meals with satisfactory results.

We have observed one curious effect of the oil that we cannot forbear noticing. During the past year we saw it administered to a girl about twenty years of age, for curvature of the lower part of the spine, accompanied with pains in the lower extremities. After taking the remedy for some time, she complained suddenly of thirst, heat of skin, and general feverishness. These symptoms were followed by an uniform, intensely red rash over the whole surface of the body, precisely like scarlatina, which disease, indeed, we supposed it to be. Upon the suspension of the oil the eruption rapidly disappeared. After two or three weeks it was again administered, when the same symptoms, but less marked, supervened. After an interval it was persevered in without their re-appearance. About the same time two patients complained to us of the same rash coming on after commencing the use of the oil. We were not aware that this had been previously noticed; but we find Dr. Bennett(*b*) stating that Dr. A. Wood informed him, some years ago, that he had observed in a few cases a bright red eruption, resembling that of scarlet fever, come on about the fourth day of its

(*a*) Dr. Bennett's treatise, p. 176. (*b*) Page 182.

use; which, however, disappeared on intermitting the medicine for a little. The former author had never observed this symptom to follow its employment. At the conclusion of his treatise, Dr. Wood writes to the author that

"Since the date of his former communication he had occasionally met with the scarlet rash, but in a very modified form, and, he thinks, almost always in males. The rash, indeed, is very striking, resembling most completely that of scarlatina, though more uniformly diffused."

One of the cases we have seen occurred, as just described, in a girl(*a*).

The length to which this article has already extended forbids our entering otherwise than briefly into the consideration of the *modus operandi* of the oil; but we feel it to be impossible altogether to pass over this part of the subject. Dr. Bennett's views, even as published in the first edition of his treatise, deserve the most attentive consideration, and we regret that we cannot find room for even an abstract of them, the more especially as in an early part of this article we stated our belief that the theory he proposes must form the basis of a rational explanation of its action.

In the appendix(*b*) to his treatise, published some years afterwards, Dr. Bennett affirms his belief, after considerable reflection and observation, that the therapeutic action of cod liver oil is dependent essentially on its being a fatty matter, perhaps more easily assimilated to the economy than any other kind of fat; and gives his opinion that the views of Ascherson are fundamentally correct, with the difference that, instead of oil and albumen uniting to form elementary cells, they only produce elementary molecules and granules, from which nuclei and cells are formed. These views are reiterated in his recent paper in the Edinburgh Monthly Journal, from whence it appears quite conclusive that, so early as 1847, this author had given up the idea of the efficacy of the iodine contained in the oil, to which, at the first publication of his Treatise, he had ascribed a portion of its therapeutic powers.

Dr. Williams believes that the oil itself proves serviceable in supplying the fat molecules, which appear to be essential to healthy nutrition, as forming the nucleoli of the primary cells or rudiments of tissues. This author refers to the second edi-

(*a*) De Jongh quotes Haller, an Austrian physician, as having noticed, in some cases, the oil to be followed by a *papular* eruption, which he considers to have been *critical*, p. 117.

(*b*) Page 183.

tion of his Principles of Medicine(*a*) for proof that he has given a different explanation to that of Dr. Bennett of the chief salutary action of the cod liver oil; his explanation being, not that it supplies fat where it is wanting, but that it supplies fat of a better kind, more fluid, more divisible, and more capable of being absorbed into, and of pervading, the structures of the body. In a note, he becomes very angry with a reviewer for asserting that his explanation, contained in the work alluded to, is a plagiarism, as being that previously given by Dr. Bennett. We can understand most fully the anger of Dr. Williams, for the truth is, that this is precisely the imputation which is only resented when it is well founded; a fact of which we have many living illustrations. Really Dr. Williams should have long ere this become hardened to an accusation of this nature, and not have so much, and so soon again, forgotten himself as to talk of the "gross misunderstandings," and "spirit of personal jealousy" of a reviewer who unmasked his discoveries. That in the appendix, and short paper on the relation of oil and albumen, Dr. Bennett has completely anticipated the explanation just given, will appear too obvious to need pointing out. Dr. Williams studiously avoids reference to these two papers, because they contain a correction of the assertion of Ascherson, adopted by Bennett, that the union of oil and albumen forms cells themselves; whereas, as is therein clearly shown, their union constitutes the primary molecules *from* which nuclei and cells are formed. If the "better fat" of Dr. Williams means anything, it means "the fat more easily assimilated to the animal economy" of Dr. Bennett. The former author asserts that the oil does not supply fat where it is wanting, because tuberculous deposits are not deficient in the fatty element; forgetting that when, in a pathological condition, the digestive powers are enfeebled, the due assimilation of fat does not take place; and, as urged by Dr. Bennett, in giving an animal oil ready-made, we save the alimentary organs the trouble, as it were, of doing this. In constitutions which cannot digest food, or convert it into the oily element, the introduction of the cod liver oil in large doses causes the necessary principle to be easily imbibed into the lacteals, where, uniting with the albumen, it constitutes the elementary granules so necessary to nutrition.

We shall not trouble our readers with an account of the various theories(*b*) which have been promulgated to account

(*a*) Published in 1848; see p. 404.

(*b*) These are given briefly in Dr. Rayner's pamphlet, which, in sixteen pages, and for four pence, will give some *information* to those who are satisfied with the *minimum*.

for the action of the oil, partly because of their very unsatisfactory character, for we think that Dr. Bennett's views, to a great extent, embody the *rationale* of its *chief* operation upon the animal economy, but principally because we are unfeignedly anxious not to withdraw their attention from the main fact—its well-ascertained curative powers. We have already too partially indicated our opinion upon several of these theories, but we cannot resist the pleasure of quoting the following excellent paragraph, probably the best contained in it, from the conclusion of De Jongh's treatise:

"The questions whether the efficacy of the cod liver oil is owing to the iodine, or the fat, or the phosphorus, or to any other of its constituent parts, are solved with great difficulty; for in all diseases, in which it is found to be efficacious, the physician has to fulfil many indications simultaneously, if he expects the perfect restoration of his patient. In general the weakened digestion is to be corrected; the secretions must be restored, and the lymphatic system brought to a higher state of activity; besides which, and what seems to be the most important of all, the tone of the nervous system is to be improved. The slightest reflection will show that neither biliary matter, nor the fatty substance, nor the iodine, nor any one single constituent part of the cod liver oil, is able, of itself, to fulfil these indications; consequently its power, as a remedy, is not to be ascribed exclusively to one only, but to the united operation, if not of all, still of the greater part."

We are aware that it may be fairly objected to these remarks, that since primary mal-assimilation lies at the foundation of the diseases in which its powers are most conspicuous, it is reasonable to imagine that the oil, by remedying this, and supplying a healthy fundamental element of the animal tissues(*a*), thus escaping the results of the bad performance of the digestive functions, may in this manner produce all its therapeutic effects. And we strongly incline to this view. But we deem it to be safer and more philosophical at present to give a certain weight to the observations just quoted from De Jongh. And it is for these very reasons that we object to that author's broad assumption, that the *brown* cod liver oil owes its greatest power to the large quantity of butyric acid and biliary matter it contains. His cases are palpably insufficient to *prove* this point. We cannot comprehend what Dr. Carey considers to be proof, when he speaks of this having been "placed beyond doubt" by the researches of the Dutch trader-physician. We

(*a*) Hence the great importance, as all writers have insisted on, of giving the oil for *a long time*, even after the symptoms of disease have apparently vanished.

make this observation with the more boldness, as neither Dr. Carey nor our readers will accuse us of throwing out any doubts of the great virtues of this variety of oil; nay, we hold it to be highly probable that its virtues *are* connected with the chemical elements mentioned by him. But we are not, therefore, to forget that the results of six cases, experimented upon by the three varieties of oil, those cases not suffering from the same diseases in the three series of experiments, are altogether insufficient to allow us to talk of proof.

In concluding we feel it necessary to remark, that, though the Treatise of De Jongh is a valuable contribution to our knowledge, it is, on the whole, of much more interest to the chemist or mere pharmacologist than to the physician. It is not well fitted for reference, from the particular manner in which it is drawn up. To those who desire practical information on the effects of the oil, its mode of action on the human economy, its methods of administration, and all other questions of importance to the physician, the Treatise, *with the Appendix*, of Dr. Bennett, will be invaluable. They who now, for the first time, become acquainted with the remarkable therapeutic merits of this agent, will, we hope, earnestly seek for fuller information than in the pages of this Journal we are enabled to give; for which purpose we strongly recommend them to obtain his Treatise, the best and, for a long time, the only one in our language.

The Elements of Materia Medica and Therapeutics. By Jonathan Pereira, M. D., &c. &c. Third Edition. London, Longmans. 1849. 8vo. vol. i. pp. 897.

Traité de Thérapeutique et de Matière Médicale. Par A. Trousseau, Professeur de Thérapeutique et de Matière Médicale a la Faculté de Médecine de Paris, et H. Pidoux, M. D. Third Edition. Paris, 1847. 2 vols. 8vo. pp. 1793.

Treatise on Therapeutics and Materia Medica. By MM. Trousseau and Pidoux.

We propose in the following observations to confine ourselves to the subject of the *classification of the Materia Medica*, and shall introduce our views of the arrangements in the works cited above, with a brief account of the general principles on which we believe that a scientific classification of drugs ought to be formed.

In the science of Materia Medica, treating, as it does, of the properties of a large number of bodies, classification is important as a help to the memory, but it has much higher purposes. A *scientific* arrangement enables us to think of and to compare together those drugs which have the greatest number of common and *practically* important properties,—affords us the means of detecting where our knowledge is deficient, whether in the facts or in our mode of interpreting them, or in both,—indicates the way by which these deficiencies are to be supplied,—and is eminently useful in suggesting new methods of observation. In thus favouring the progress of the science, it developes the means of its own rectification and improvement. It is only the student of a scientific classification who can acquire the knowledge which enables him to practise on general principles, and so to avail himself with facility, on all sides, of the rapid advancement of the medical sciences.

We are surprised that many able writers on the materia medica have been indifferent to these important advantages, and that so little care has been devoted to the scientific arrangement of drugs. Many of the existing classifications are unscientific and bad, and are consequently fertile sources of error, both in fact and in generalization. We allude to the so-called therapeutic arrangements, and not to those founded on the natural-historical, sensible, or chemical properties of drugs, which are acknowledged make-shifts to avoid the supposed insuperable difficulties of a scientific classification, and present no claim to our notice. With them we have no more concern than the natural philosopher has with the arrangement of bodies in chemistry, or the chemist with the natural arrangement of plants. The bodies examined by all are the same, but it is the duty of each science to arrange them with reference to the properties (and their practical application, if they have such) which it is the object of the science to investigate. When we avoid this duty, or declare its performance impossible, we virtually deny the right of therapeutics to rank as a science.

It is objected that the whole range of what are termed facts in the science is so involved in controversy, doubt, and obscurity, that an attempt to arrange them systematically is useless, and has the pernicious result of giving precision and an air of truth to error. We maintain, however, that our knowledge of the physiological action of drugs,—which, as will be seen in the sequel, should form the basis of a scientific arrangement,—is sufficiently accurate, and embraces an ample number of undoubted truths for our purpose. Thus, the facts indicated in describing the action of a stimulant, sedative,

tonic, or narcotic, are sufficiently precise to form the basis of a highly useful classification. A physiological arrangement may be pushed too far, or beyond the limits of ascertained truth; and attempts may be made to found classes and orders on phenomena still involved in obscurity. This is the abuse of a true principle, and is no argument against its proper application. Among the many illustrations of this error, which the literature of therapeutics affords, the recent classification of Professor Schultz of Berlin may be cited as perhaps the most pertinent(*a*). The "controversy, doubt, and obscurity," complained of, exist much less in our knowledge of the physiological action of drugs than in our knowledge of the practical application of this action to the treatment of disease, where their existence does not prejudice the scientific value of an arrangement founded on the effects of medicines on the healthy body.

Dr. Pereira observes,

"Scarcely two medicines give rise to precisely the same effects; and as we are unable to determine the nature of the modification produced by each, it is impossible to bring the substances used in medicine under a general good or physiological arrangement"(*b*).

We confess our inability to comprehend this sentence, but the writer is unquestionably in error if he supposes, that, because no two drugs are exactly alike in action, an arrangement of medicines founded upon their effects is impracticable. Those drugs are grouped together, which in their properties *resemble* each other, and we need scarcely remind the reader, that on this principle of resemblance are founded the beautiful systems of classification in the natural sciences. The same author continues:

"Every writer who has attempted it has found the facts hitherto ascertained insufficient for his purpose, and has, therefore, been necessarily obliged to call in the aid of theory; hence the so-called physiological classifications of medicines are in reality founded on the prevailing medical doctrines of the day, or on the peculiar notions of the writer."

Theory was employed, not because of the insufficiency of the facts, but because of the incompetency of the *soi-disant* philosophers in this department of medicine to make a proper use of them. Materia Medica is eminently an empirical science, and every step in the discovery of truth must be made by

(*a*) *Natürliches System der allgemeinen Pharmakologie nach de Wirkungsorganismus der Arzneien.* 8vo. Berlin. 1846.

(*b*) First edition, vol. i. p. 8.

close induction. Unfortunately, the writers referred to by Dr. Pereira,—*e. g.* Brown, Rasori, Broussais, and Hahnemann,—thought otherwise, and, indulging in speculations independently of observation, attempted to predict facts in place of carefully generalizing those already discovered. That previous authors have made a bad use of the facts of the science seems to us a strong reason for our endeavouring to employ them better, and to confine ourselves rigidly to the positive.

The properties of drugs are numerous and of very different kinds, but a little reflection will enable us easily to fix their relative importance in a system of classification. The physiological, chemical, and other properties of a medicine, are examined not for their own sake, but to promote the discovery and explanation of its applications in the treatment of disease. *The discovery, therefore, of the therapeutic application, which is the grand object of the science, should be the presiding principle of its classification;* and of the several kinds of properties which a drug possesses, viz., physiological, chemical, botanical, and sensible, it is beyond question, that the first are a long way before the others in their importance in guiding and suggesting its practical application. Indeed, our object in studying the other properties is to improve and give exactitude to our knowledge of the first. *The physiological action of drugs should form, consequently, the basis of their scientific arrangement.* Yet the other properties are sometimes usefully employed to separate the minor divisions of the physiological classes; but they should only be had recourse to for this purpose, when the physiological action fails to afford sufficient elements of distinction. The chemical, botanical, and sensible properties are now enumerated in, we believe, the order of their value as contributing to the knowledge of physiological action.

We speak here of physiological action, as obtained by the exhibition of medicinal doses. When, from the quantity of the drug, life itself is endangered, the phenomena become more complex, and often assume a new character; as when a stimulant (alcohol), and a tonic (quina), occasion narcotism in poisonous doses. Our science does not require that the consideration of the poisonous effects should be included in the physiological arrangement of drugs. It would give rise to complexity, and confer no advantage in therapeutic application. Indeed, the practical ends of Toxicology and Materia Medica are different; poisons are arranged in groups, whose effects require similar treatment; drugs in groups, whose effects have a common application in the treatment of disease.

It is an essential principle in a physiological classification, that *the drugs be arranged separately, according to their local and general actions*, as between these there is often no correspondence, *e. g.* arsenic, camphor, and nitrate of silver.

Having determined that the physiological action in medicinal doses shall form the basis of our arrangement, it remains for us to ascertain the relative value (with reference to our present subject) of the different effects produced by drugs. Some of these are general, others special. The effects designated by the terms sedative, stimulant, and tonic are examples of the first kind. Their manifestation is not confined to one organ or system, but is extended to the whole body. A sedative does not depress the stomach only, or the lungs, or the circulation, or the nervous system, but all of these. We grant that all are not influenced to the same extent, and that, for example, some sedatives act more powerfully on the vascular, and others more obviously on the nervous system; but we maintain that the Materia Medica furnishes no example either of a drug acting as a sedative on one system, and as a stimulant on another, or of a sedative or stimulant whose power is not displayed more or less distinctly throughout the entire frame. These then are illustrations of *general physiological action, on which, in virtue of its universality, the primary divisions should be established.* The classes thus formed, of stimulants, sedatives, tonics, &c., admit of a greater number of common and important propositions(*a*), and their practical applications are more obvious than any other classes into which, upon different principles of arrangement, the drugs could be thrown. The term "special" as opposed to "general," designates the action on a particular organ or system; thus, digitalis is a general sedative, but operates specially on the circulation; ergot of rye is a special stimulant of the uterus, and belladonna and opium excite special effects on the iris. These are obviously of inferior value to the former; but they serve usefully as elements of distinction for the secondary divisions. Some of them being included in the general effect, of which they are local modifications in degree, as in the special influence of digitalis on the circulation, are of higher value than those phenomena which have no ascertained relation to the general action, as the dilatation or contraction of the pupil.

The divisions should be as nearly as possible mutually exclusive; stimulants should contain no sedatives, and *vice versâ*. The two classes referred to *are* mutually exclusive; but the same perfection is not attainable throughout a physiological

(*a*) The best criterion of a sound and natural system of classification.

arrangement (*e. g.* stimulants, narcotics, and evacuants), and it is not essential to its scientific character, as some erroneously suppose. The nature of the properties themselves, as well as the circumstance, that in our classification we have regard both to the properties and their practical application, renders the attainment of mutual exclusiveness in all the divisions quite impracticable. It is another and a good test of the scientific accuracy of the system; but it would be wrong to secure it with the sacrifice of any practical advantage.

We shall now apply these general principles to the examination of the physiological arrangements in the works of Pereira and of Trousseau and Pidoux, commencing with Dr. Pereira's, of that proposed in which the following is a synoptic view:—

	MEDICAMENTA.
1. Medicines employed for their external or topical effects.	*Topica.*
a. Acting mechanically	Class 1, T. Mechanica.
β. Acting chemically	Class 2, T. Chemica.
γ. Acting dynamically	Class 3, T. Dynamica.
2. Medicines employed for their remote or general effects.	*Generalia.*
a. Acting on the blood	Class 4, Hæmatica.
β. Acting on the respiratory organs	Class 5, Pneumatica.
γ. Acting on the nervous system .	Class 6, Neurotica.
δ. Acting on the digestive organs .	Class 7, Cœliaca.
ε. Acting on the excernent system .	Class 8, Eccritica.
ζ. Acting on the sexual organs . .	Class 9, Genetica.

The subdivisions are, of

- Class I. Topica mechanica . . :
  - mechanical antidotes.
  - mechanical purgatives and anthelmintics.
  - dentifrices.
- Class II. T. chemica . . . . :
  - caustics.
  - astringents.
  - chemical antidotes.
  - disinfectants.
- Class III. T. dynamica . . . :
  - acrids.
  - emollients.
- Class IV. Hæmatica . . :
  - *a.* physical:
    - diluents.
    - inspissants.
  - *b.* chemical:
    - spanæmics, or impoverishers of the blood.
    - hæmatinics, or enrichers of the blood.
  - *c.* dynamical

- Class V. Pneumatica
  - affecting the muscles of respiration.
  - affecting the aërian membrane.
  - diminishing the want of breath.
  - influencing the calorific functions.
- Class VI. Neurotica
  - 1. cerebro-spinals
    1. phrenics; affecting the mind.
    2. æsthetics; affecting sensibility.
    3. cinetics; affecting voluntary and reflex spinal movements.
    4. hynics; affecting sleep.
  - 2. ganglionics
    1. affecting the heart and arteries.
       - *a.* stimulants, exciting them.
       - *b.* sedantia, depressing them.
    2. affecting the alimentary canal.
- Class VII. Cœliaca
  - enterics.
  - hepatics.
  - splenics.
  - sialics and pancreatics.
- Class VIII. Eccritica
  1. augmenting secretion; evacuants.
  2. diminishing secretion.
  3. altering quality of secretions.
- Class IX. Genetica
  - affecting the orgasm.
    - aphrodisiacs.
    - anaphrodisiacs.
  - affecting the uterus.
    - emmenagogues.
    - ecbolics.

We understand it to have been Dr. Pereira's intention in this arrangement to classify drugs according to their physiological effects; but in the very outset he forgets his principle, and we find the members of the three classes of the *topica* arranged, not, according to their general physiological action, into irritants, sedatives, astringents, &c., but, according to Dr. Pereira's views of their *modus operandi*, into the *Topica mechanica, Topica chemica, and Topica dynamica;* and we have only to glance at the detailed account of these classes to be convinced of the confusion and inaccuracy to which this principle of division of necessity leads. Our knowledge of the *modus operandi* of medicines, even in their local action, is manifestly too imperfect to allow of its safely serving the ends of classification. In the first class and second order, entitled "purgatives and anthelmintics acting mechanically," we find with other medicines

tin filings; but so far from our being certain that this medicine operates mechanically, there is good reason to suspect that, when exposed to the combined influence of air and the gastro-intestinal fluids, a portion of it is converted into the proto-chloride, a compound of undoubted energy, and to the operation of which the anthelmintic action of the drug may reasonably be referred. The position of this drug affords a good illustration of the confusion into which our author's arrangement has drawn him; for, on turning to p. 725 of his work, it will be seen that he does not believe in the mechanical explanation of its anthelmintic property. In the dentifrices, forming the third order of the same class, are included chalk, cinchona, and catechu; but the chief value of the first resides in its power of neutralizing free acids about the teeth, and the second and third are useful as astringents to the gums. They are not, therefore, "topical medicines acting mechanically."

In class II., or the *Topica chemica*, are comprised the escharotics, whose operation in the destruction of warts and condylomata is chemical and destructive; but when employed to form issues, it seems an error to include them under "medicines acting chemically." The mere formation of an issue consists, it is true, in the chemical destruction of the skin, but its therapeutic value is due not to the operation but to the vital phenomena which follow, and all of which are embraced in the term issue. Many of the acrids (as mustard, cantharides, and tartar emetic, placed by the author among the dynamical agents) might with as much justice be ranked with the "topical medicines acting chemically;" for, probably, the first effect of these drugs is chemical, and the redness, vesication, and suppuration, which ensue, are secondary vital phenomena, efforts of the skin to throw off or protect itself from the offending irritant. With like reason, the operation of venesection being physical, blood-letting might be ranked with mechanical agents. Astringents form the second order of the same class, but their therapeutic value is probably due more to their vital actions of coagulating blood and constricting the animal fibre, than to their chemical influence on the fluids. Dr. Pereira seeks to justify his arrangement on the ground that their "dynamic influence is apparently a consequence of their chemical action." —p. 158. This may or may not be the case, but certainly the relation of the chemical and dynamic phenomena here is not more apparent than in the acrids, which Dr. Pereira transfers to the dynamic class.

Nearly all the drugs of the third, fourth, and fifth orders of this class, or the antidotes, disinfectants, and antiseptics, exert

their power external to the body, which they do not necessarily influence either locally or generally. It is hence an error to give them a place in a classification founded on "physiological principles."—p. 154. We desire not to exclude these agents from the *materia medica*, in which they may be retained, and the requirements of a scientific classification easily met by the following arrangement. We divide the articles of the *materia medica* into two great divisions:—1, physiological, including such as are employed in virtue of their physiological action; and, 2, non-physiological, including those bodies employed in medicine, but not in virtue of their action on the living body. Into this division are thrown chemical antidotes, disinfectants, lithontriptics, the vermicide section of anthelmintics, &c.; and we avoid the evil into which Dr. Pereira and other authors have fallen, of doing violence to the scientific accuracy of the physiological division, which, in relation to therapeutics, constitutes the really important section of the *materia medica*. The third class of topical agents, or the *Topica dynamica*, comprises the acrids and emollients. We have already stated our suspicion that the first action of an acrid is chemical, and we have now to observe in reference to the emollients, that although their action, when applied externally, is unquestionably in part dynamic, it is also in great part mechanical, and when they are employed as demulcents, entirely so.

These remarks on the first three classes show clearly the inconvenience of selecting the *modus operandi* as the principle of classification of medicines, in the total sum of whose action may often be found all the three elements, mechanical, chemical, and vital, and very generally the two last.

Leaving the *Topica* to enter upon the *Generalia*, the author again changes his ground, and, in place of arranging the medicines according to their general physiological action, or their *modus operandi*, as in the *Topica*, he adopts, as the principle of division, the organ or system on which the drug is presumed to operate more especially. This plan has involved him in confusion and endless repetition, and the resulting arrangement does not respond to a single scientific requirement.

The chief end of the classification of medicines, viz., to facilitate their therapeutic application, is altogether lost sight of by Dr. Pereira. Let the pupil study his arrangement how carefully soever, and afterwards be told that a drug with which he is unacquainted belongs to the class *pneumatica;* if he then be asked, what inferences in relation to its practical employment this information has enabled him to draw? he will reply, none. All the knowledge he acquires is that it "acts on the respira-

tory organs:" but it may influence also, as is the case with most of the *pneumatica*, every other system in the body, and he obtains no clue whatever to the vital object of his studies, viz., whether the drug is likely to be useful or injurious in inflammation, apoplexy, or spasmodic disease of the lungs, or of any other organ or system in the body. Beyond the simple and nearly useless fact, that it "acts on the respiratory organs," not another common proposition can be made of the members of the class (see p. 456, note); and the same objection applies to all the six classes of the *Generalia*.

No attempt has been made to comply with the principle requiring the classes to be mutually exclusive so far as is consistent with the practical utility of the arrangement. In the *hæmatica*, *pneumatica*, *neurotica*, and *cœliaca*, we see in friendly juxta-position tonics, stimulants, sedatives, narcotics, and evacuants, and a large number of drugs may be found in one-half of the classes; a considerable number in two-thirds; and a few are referred to in five of the six or entire number of the *Generalia*.

The third class of the *Generalia* is termed *neurotica*, or "medicines acting on the nervous system." These, says the author,

"may be conveniently arranged in two sub-classes; one called *cerebro-spinalia*, including agents which affect the nervous system of animal life; the other, termed *ganglionica*, comprehending agents affecting the nervous system of organic life."

But this division has no existence in nature; and among the drugs named as belonging to the *neurotica*, it is sarcely possible to find one whose action is confined to either system; and in fact so large a proportion of these are noticed by Dr. Pereira in both sub-classes, that the so-called classification serves the purpose merely of describing their physiological action, not of arranging them in separate groups. Among the *cerebro-spinalia* are placed alcohol, chloroform, tobacco, and opium; but does not alcohol quicken the heart's pulsations? does chloroform never kill by syncope? does not tobacco occasion vomiting, purging, extreme depression of the circulation, and fainting? and does not opium constipate the bowels?(*a*) Aconite, colchicum, digitalis, gentian, and cinchona, influence the organs supplied by the ganglionic equally with those furnished by the cerebro-spinal system, and the attempt to separate them into the sub-classes *ganglionics* and *cerebro-spinals* is therefore vain.

(*a*) The heart and abdominal viscera derive their nervous supply from the ganglionic system.

Tonics form a sub-order of the *cerebro-spinals*, and as the reader may be anxious to know how they got there, we give the author's reasons in his own words. Tonics are "agents which increase the tone of the system," and tone "is greatly influenced by, if it be not absolutely dependent on, the cerebro-spinal system."—p. 206. It appears to us possible that tone may be greatly dependent for its permanent display on the cerebro-spinal system, and yet be improved independently of it. Tonics augment the force of assimilation, and improve the general strength, but of the how and the system by which these ends are attained, we know nothing certain. Their obvious effect on the assimilating power associates their operation more closely with the ganglionic than with the cerebro-spinal system, but, for aught we know, they may increase the force of assimilation independently of all action whatever on nervous systems(*a*).

It would serve no useful purpose to continue our criticism of Dr. Pereira's classification. We believe the principles on which it is based to be wrong, and have no hesitation in saying that, for the practical end of therapeutic science, it is nearly useless, and infinitely inferior to the physiological arrangement in the first edition of his work. In the minor divisions of orders and sub-orders the author's accurate acquaintance with the materia medica is often happily applied, and the whole amply testifies to his cyclopedic knowledge in this department of medicine. It is in the description of individual drugs that the author's strength unquestionably lies, and as we have freely indicated the faults in his generalizations, we have the greater pleasure in stating our opinion, that for method, completeness, and accuracy of detail, the special pharmacology of Dr. Pereira is without a parallel in any language.

The arrangement of MM. Trousseau and Pidoux is simple, and presents few innovations in nomenclature and classes. They divide medicines into thirteen classes, which are described in the following order:—1. Reconstituant tonics (iron); 2. Astringents; 3. Alteratives; 4. Irritants; 5. Antiphlogistics; 6. Evacuants; 7. Excitants of the Muscular System; 8. Narcotics; 9. Anti-spasmodics; 10. Neurosthenic tonics (vegetable bitters); 11. Excitants; 12. Sedatives; and, 13. Anthelmintics.

In many respects imperfect, this classification has greater practical value than that of Pereira. We object to classes 5 and

(*a*) The invigorating or tonic power of certain substances on vegetables gives support to this view.

9, which are therapeutic, and are exceptions to the general principle of division, which is physiological. We would willingly waive the scientific requirement of a uniform principle of arrangement, were difficulty or inconvenience experienced in distributing the anti-phlogistics and anti-spasmodics in a purely physiological classification; but this is not the case, and they very naturally take their places respectively with the sedatives and stimulants. The important distinction between local and general action does not receive sufficient prominence, and in the sequence of the classes no order whatever is recognised. No attempt is made by our authors to group into orders the drugs of each class, and they lose in consequence much of the practical value of a physiological classification. The division of vegetable bitter tonics into the pure, astringent, mucilaginous, and aromatic, is natural, and of obvious utility in practice; and the same remarks apply to the division of stimulants into the alcoholic, etherial, ammoniacal, &c.

The first class or reconstituant tonics contains iron and its compounds, and the adjective term is employed to indicate that the metal is retained in the blood and assimilated; but our present knowledge does not enable us to say with certainty, whether, in the cure of chlorosis, the iron operates simply as a general tonic, or is assimilated and enters directly into the formation of the blood-globule. There are good arguments(*a*) in favour of the latter hypothesis; but we strongly object to a class being founded on an hypothesis, however probable, and would much rather see the chalybeates forming as usual a section of the general class tonics.

We confess a profound dislike to the third class, and its name of alteratives; but it would carry us far beyond our limits to discuss this subject—an old bone of contention with therapeutists; and we must now dismiss the work of MM. Trousseau and Pidoux, reserving for a future occasion our opinion of its general merits.

It may appear to some of our readers, that we attach undue importance to this subject of classification; but its improvement is essential to the scientific character of therapeutics, and surely no time or labour is misapplied, which may tend to raise to its true position this inconceivably neglected department of medicine. We cheerfully accord his due to every successful labourer in the wide domain of medical science; but, on the

(*a*) These are:—1, other tonics have not the same effect as iron in chlorosis; 2, those chalybeates which from their nature are detained in the blood are said to be the most efficacious; 3, the absolute amount of iron in the blood in chlorosis is augmented during a ferruginous course.

other hand, we protest against the injustice of the present day, which is too apt to give more attention and more honour to the veriest tyro who may see a hollow in a cell, or a mould in the excrements, than to him who, by cautious investigation at the bed-side, may have discovered the true action of a medicine, or a new means of allaying pain or of restoring health. Our pages will testify how far it is from our wish to undervalue pathology, histology, and diagnosis: but their importance is brought to light only by the therapeutist. It is for him, and the task is a high and arduous one, to arrange the facts from all these sources, as well as from the materia medica, and to deduce from them general principles, for the successful prosecution of the great aim of all our inquiries, the alleviation of suffering and cure of disease.

The Natural History of Ireland. Vol. II. *Birds; comprising the Orders Rasores and Grallatores.* By William Thompson, Esq., President of the Natural History and Philosophical Society of Belfast, &c. London, Reeve, Benham, and Reeve. 1850. 8vo. pp. 350.

A Manual of the British Marine Algæ; containing generic and specific Descriptions of all the known British Species of Seaweeds. With Plates to illustrate all the Genera. By William Henry Harvey, M.D., M.R.I.A., Keeper of the Herbarium of the University of Dublin, and Professor of Botany to the Royal Dublin Society. London, Van Voorst. 1849. 8vo. pp. 252.

There is no recreation so suited to the habits of the medical man as the practical pursuit of the study of natural history. His professional education so peculiarly adapts him for appreciating its fascinating beauties that it frequently becomes with him a passion; and we, therefore, find that in all ages physicians have been the most successful cultivators of the science. It is not, however, with the wish of inducing any of our readers to abandon their profession, and become natural historians, that we call their attention to the above works, but rather with the view of pointing out to those whose lot is cast in country districts, or in the neighbourhood of the ocean with which our islands are surrounded, valuable aids in a delightful inquiry, to which we doubt not many of them are devoted.

The first volume of Mr. Thompson's work has been noticed in our seventh volume, and the meed of praise so justly its due

then awarded to it; and of the second volume, now before us, we can but say that it fully equals its predecessor. Abounding in practical facts as regards the habits and distribution of the birds which are the permanent inhabitants or but occasional visitants of Ireland, and interspersed abundantly with illustrative ornithological anecdotes, it presents the reader with the facts of history in the attractive garb, we might almost say, of a novel.

The book of Dr. Harvey is a second edition of one published by him eight years ago, but with so many alterations and improvements as to constitute it a new work. The chief improvement is the addition of plates, by means of which all the genera are pictorially illustrated, and the study of a difficult branch of marine botany thereby rendered much more easy. Dr. Harvey's fame, as a botanist and botanical writer, is too widely spread to require any eulogy from us; it is now not only European but Transatlantic, for while we pen these lines he is engaged in the delivery of a course of lectures at Boston, in the United States, for which purpose he was invited thither towards the close of last year; a fact of which, as his fellow-countrymen, we cannot avoid feeling proud, and one which is not alone honourable to him, but affords excellent testimony of the liberality of the Americans.

The present works of both Dr. Harvey and Mr. Thompson are most admirably got out, and do much credit to their respective publishers, who seem to rival each other in their style of publication, especially of books connected with natural history.

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PART III.

REPORTS, RETROSPECTS, AND SCIENTIFIC INTELLIGENCE.

PROCEEDINGS OF THE PATHOLOGICAL SOCIETY OF DUBLIN.

TENTH SESSION.—1849–50.

Malignant Tumour on the Head.—Dr. O'Ferrall said, that the case which he was about to bring under the notice of the Society was, perhaps, of more value as contributing to the diagnosis of tumours in general than as an example of a specific disease.

The patient, a woman about sixty years of age, was admitted into St. Vincent's Hospital a short time since, on account of cancer of the right breast. On examination he found an extensive development of cancerous disease, not only in the breast itself, but likewise in the axillary region. Above and below the clavicle of the opposite side, another morbid growth, evidently engaging the bone, was observed. Concurrent with this state of things, the patient complained of pain, which she referred to the right temple, and described as extending backward towards the side of the head; and, upon examining this locality, the tumour to which he was desirous of calling attention was discovered. It was of the size of a walnut, but very much compressed, resembling a flattened hemisphere; it was wholly immoveable, slightly irregular upon the surface, and the seat of occasional darting pains. These characters, connected with the other evidences of cancerous disease already referred to, left no doubt in his mind respecting the nature of the tumour on the head, which he therefore regarded as a part of a general disease of a cancerous nature, affecting the entire system. The woman gradually sank, exhibiting the symptoms which usually accompanied the disease under which she laboured.

Autopsy.—Upon examining the body after death, the locality of the tumour in the head became the point of special attention, and on raising the scalp it was presented to view, covered by the periosteum, which passed smoothly from the bone over the tumour, being thickened to some extent, but in other respects uninjured. Internally the dura mater was also thickened, but neither perfora-

ted nor destroyed at any point. On cutting away the tumour a perforation, nearly an inch in diameter, was discovered in the cranium; and, from an inspection of the parts, he was enabled to demonstrate that the growth had originated in the diploë between the two tables of the skull; he could distinctly see that the inner table was less extensively destroyed than the external, and that the cancerous mass sprang from the intermediate structure between both tables. The clavicle was the next subject of examination. Its section exhibited cancerous degeneration of the cancellated structure, extending to the outer surface of the bone, where it was connected both above and below with some cancerous masses. A section of the mamma displayed the usual cancerous structure.

With respect to the exact local origin of this cranial tumour, he thought there could be no doubt but that it had originated in the diploë. It could not have originated in the pericranium, for that membrane was quite unbroken, and was involved in no other way than by contact and adhesion. It did not originate in the internal table, for a portion of this still remained, and was adherent to the dura mater by a spicular surface; but from the diploë between the two tables a peculiar malignant structure was observed to spring, which, being continuous with the external tumour, clearly showed its source.

Dr. O'Ferrall exhibited a plate from Cruveilhier's work, showing a similar anatomical arrangement. In his case the tumour had also perforated the cranium at one place, while in another the two tables were unbroken, but separated by small cancerous masses which occupied the diploë, and showed, beyond a doubt, the exact structure in which they originated. Indeed, he believed that in cancerous disease of the bones it generally happened that the growth originated in the cancellated structure.

He exhibited drawings of several cases confirming this view; and in one of them, where a large malignant growth, originating in the femur, had spread in every direction about the hip-joint, it sprang from the cancellated structure, while numbers of independent malignant tubercles were seen scattered through this structure, between the great trochanter and the condyles of the femur.

Dr. O'Ferrall remarked, that, regarded as pathological specimens, the several cases to which he had called attention were possessed of exceeding interest, for they displayed not only the vast extent of structure which cancerous disease occasionally involved, but also the mode in which the disease appeared to be developed in the osseous system. But, even in another point of view, the case before the Society possessed practical value, for it showed the dangerous consequences which might ensue from interfering with a tumour of this description. Scarcely three months since, a lady who lived in the west of Ireland came to town, in order to consult him respecting a tumour on her head, which she was desirous of having removed. On examination he ascertained the tumour was not moveable, was uneven on the surface, and had not any of the external characters of the encysted tumour; it was plainly connected

with the bone, was bound down by the periosteum, and much flattened by its pressure. At the same time the cancerous diathesis was clearly exhibited in the countenance of the patient, so that he was induced to inquire whether she had a tumour in any other part of her body. At first she was unwilling to admit that such was the case, but at length permitted an examination, when a well-marked cancer of the breast, and a lobulated tumour in the axilla, were discovered. Now it was obvious that in this case any interference with the tumour on the head would have been followed by the most serious consequences; and, therefore, independently of its pathological value, the case he had laid before the Society was one which deserved to be placed upon record.

Cancer of the Pancreas and Stomach.—Jaundice.—Rupture of the Gall-bladder.—Dr. M'Dowel exhibited a specimen of extensive cancerous disease in the abdomen.

The patient who was the subject of the case had been under his own observation for about one month in the Whitworth Hospital, and was previously an out-patient at the Talbot Dispensary, under the care of Professor R. W. Smith. The history of the case, which extended over a great many years, was briefly as follows. The patient had for a great length of time laboured under what he called "stomach complaint:" he had occasional vomiting, uneasiness and weight about the epigastric region, and the ordinary symptoms of severe dyspepsia. During the last few years of his life he had lost flesh and strength, so that latterly he had been unable to leave his bed. On admission into hospital his countenance exhibited decided evidence of the cancerous diathesis, and he was greatly emaciated. During the time he was in hospital he vomited only twice, and on these occasions the vomiting was artificially induced by the patient himself, in the hope that it would remove a sense of weight and uneasiness which he experienced in the region of the stomach, and which was never absent. He took extremely little food, and made little or no complaint; occasionally he said he suffered from pain in the lumbar region. On examining the abdomen, which was suspected to be the seat of cancer, it was found unusually hard and resisting to the touch, so as to prevent any examination being made into the state of the different viscera; however, here and there several small, hard, moveable tubercles were felt. The patient gradually got weaker, ten days before his death became jaundiced, and ultimately died in rather a sudden manner.

Autopsy.—On examination of the body after death, a very large amount of disease was discovered in the abdomen. On reflecting the parietes, the effects of previous peritonitis were discovered. All the viscera were firmly united together by strong bands of lymph, which, in some situations, had become considerably elongated, showing that the inflammation was not of very recent occurrence. The whole of the interior of the abdomen, together with the viscera, was stained with bile, a large quantity of which was lying in the meshes formed by the effusion of lymph which had formerly taken place. A large cancerous mass was found to engage the pan-

creas and the pyloric extremity of the stomach, extending from thence back to the vertebræ. The transverse arch of the colon was adherent to the front of the stomach. When it was detached, an opening as large as a shilling, with rounded edges, was observed upon the anterior surface of the stomach. The adhesion of the colon to its margin had prevented the opening from becoming a perforation. The stomach was remarkably capacious, and its thickness greatly increased by the hypertrophy of the muscular coat. In its interior were seen projecting tumours covered by the mucous membrane and filled with cerebriform matter: several of these presented the depressed centre, an appearance so characteristic of encephaloid tubercle of the liver. The pyloric opening was considerably constricted. The pancreas was converted into a solid mass of scirrhus. On tracing the biliary ducts, the ductus communis choledochus was found greatly dilated, so much so as to allow the little finger to be passed even into its subdivisions. Lower down the duct was completely obstructed, so that a probe could not be passed into the duodenum. The state of the gall-bladder presented a contrast to that of the duct, as it was collapsed, and not larger than usual: this was owing to a rupture of its coats having taken place, by which bile had become extravasated in great quantity. This opening existed in the fundus of the gall-bladder, and had the appearance of a rent, with irregular edges. The coats of the gall-bladder presented an exceedingly dark appearance, but there was no evidence that this viscus, previously to its rupture, had been much distended. It is well known, that in cases of mechanical obstruction the gall-bladder is capable of undergoing a great amount of distention. In a case recorded by the late Mr. Todd, the gall-bladder was so enormously distended as to form a sac capable of containing three or four quarts of fluid bile; it formed a large fluctuating tumour in the abdomen, reaching as low as the crest of the ilium on the right side. On the supposition that it was an hepatic abscess, the cyst was punctured, an enormous quantity of bile was evacuated, but death speedily followed. Similar cases are recorded by Dr. Stokes, in the Cyclopædia of Practical Medicine.

The glands around the aorta formed a mass of firm cancerous structure, which pressed upon that vessel, and actually encroached upon its caliber, which, at one point, was greatly diminished. Dr. M'Dowel remarked that the disease in this case had originated either in the pyloric end of the stomach or in the head of the pancreas, then, in its progress, gave rise to ulceration of the stomach, which had almost caused a perforation of that organ, but was arrested by the adhesive inflammation which was set up when the ulceration had extended as far as the serous membrane: general peritonitis was thus established, and lymph was abundantly thrown out. These changes constituted what might be termed the *first stage* of the complaint. Subsequently, as the disease extended, the ductus communis choledochus became involved; by the obstruction of this duct jaundice was produced, and finally the rupture of the gall-bladder brought the case to a fatal termination.

Acute Phthisis.—Dr. Law drew attention to a specimen illustrative of a case of acute phthisis. It was that of a man of about forty years of age, a steward and gardener by occupation, who had been constantly in the enjoyment of good health up to November, 1848, when, in consequence of his being greatly exposed to severe weather, he contracted a cold. This cold was accompanied by a cough, which, however, never distressed him much until a month previous to his admission into hospital, which took place on the 7th of November last. He was a tall, bony man, and rather thin; but it was difficult to determine whether the emaciation resulted from natural causes or from disease. At the period of his admission he complained of a most distressing cough, accompanied by a sense of great soreness, which he referred to the sternum. The chest was rather flat, slightly depressed under the right clavicle, and very little, if at all so, under the left. Percussion gave a universally clear sound over the thoracic region, except just beneath the acromial end of the right clavicle, where a certain amount of dulness was perceptible. There was, perhaps, an exceedingly slight degree of dulness beneath the left clavicle also. By auscultation a trifling amount of crepitus was heard under the right clavicle, but no abnormal sound could be detected under the opposite clavicle, though the respiratory murmur was feebler than natural in that situation. In the other portions of both lungs the respiration, both anteriorly and posteriorly, was rather coarse, having lost its natural smoothness, but beyond this there was nothing abnormal discovered. The cough being the most distressing symptom, particular attention was paid to it. From the 7th of November, the date of his admission, to the 17th of the same month, the case progressed in a favourable manner; but on the morning of the last-mentioned day, when he entered the ward where the man lay, he found him sitting up in bed, literally gasping for breath. His face was deeply congested, and its expression indicative of the greatest alarm and distress. Dr. Law's first impression was, that some small cavity, which had escaped detection, had caused perforation of the pleura pulmonalis, and that pneumothorax had supervened; for he had never before, in his practice, observed an instance of so sudden and distressing dyspnœa arise from any other cause. On percussing the thorax his suspicion of pneumothorax was not confirmed; he could find nothing but a slight comparative dulness at the posterior part of the left side of the chest, and upon applying the stethoscope he detected a well-marked crepitus, which extended over all the posterior wall of the left lung, with the exception of its base, where there was complete absence of respiration. He concluded at once that extensive pneumonia or congestion had set in. The patient being in a very weak condition, he did not feel warranted in drawing blood from him, and therefore contented himself with administering tartar emetic combined with calomel and opium, and with applying a blister to the chest. The medicines, however, disagreed with him, giving rise to irritation in the bowels, and he was therefore obliged to discontinue their use.

For some days the man became a little better, but eventually

his breathing became as distressing as before, and he expired on the 24th of November. Dr. Law had no doubt that, on the 17th of November, percussion gave a clear sound over the surfaces of both lungs, except, as before observed, under the right clavicle and at the postero-inferior part of the left side of the chest; and the only sign which he was enabled to detect with the aid of the stethoscope was a crepitus at the posterior part of the left lung, and in the antero-inferior portion of the right.

Autopsy.—When the chest was opened, the heart first attracted attention; it was placed in the middle of the mediastinum, the lungs almost meeting in front of it. An intimate union existed between the internal surfaces of both lungs and each side of the pericardium. The left lung was removed from the chest with much difficulty, owing to adhesions between the pleura pulmonalis and costalis. It was necessary, in order to remove it, to cut it through at the base. A thick coating of lymph covered the entire lung, the surface of which was marked by impressions of the ribs. On making a section of the lung, from the apex to the base, a universal development of miliary tubercles was found to have taken place throughout the entire organ; and, in making a similar section of the opposite lung, it was found to be in precisely the same condition. Both lungs, from their apices to their bases, were universally filled with tubercles, as little advanced in their upper as in their lower parts.

Dr. Law thought there was scarcely a case on record in which phthisis had run its course so rapidly as in the example before the Society; the stethoscopic signs affording so slight evidence of the presence of tubercles, at least to any extent, before the period of his first dyspnœa, on the 17th of November. This peculiar modification of the disease had been noticed by Louis, and also by Dr. Stokes. The last-named physician had generally found it to supervene in cases of fever, and had divided it into three classes, namely, bronchitic, pneumonic, and hemoptysic; the present case apparently belonging to the second of these divisions, the pneumonic. Dr. Stokes, however, differed in some respects from Louis, who stated, that in all the cases he had met with, the patients had been previously in comparatively good health. The cases of Dr. Stokes, on the contrary, occurred in patients whose general health had been broken down by typhus fever, with gastro-enteric complication. If any proof was needed to show that the present case was not an instance of protracted phthisis, it was only necessary to point to the size and healthy muscular condition of the heart, which was invariably small and attenuated in a case of phthisis which pursued its ordinary chronic course. He gave a section of the left lung to Dr. Steele, with a view to have it examined under the microscope, and he had since been informed by that gentleman that he had never previously seen such a perfect specimen of tubercles as those which he observed in the portion of lung which had been submitted for his examination. In other instances, the tubercles he had seen were always more or less broken down; but in this case they were entire and quite uninjured. This state of things tended to confirm his view with respect

to the rapidity with which the tubercles must have been developed, for the pulmonary interspaces were not loaded with fat, and the pulmonary structure had not undergone any of those changes which always ensued in pulmonary tissue in which respiration had not been carried on for a length of time.

Scrofulous Disease of the Elbow-joint.—Mr. Hamilton exhibited a specimen showing the effects of scrofula upon the elbow-joint. The subject of the case was a girl about thirteen years of age; she had been for a length of time suffering from the disease, and was brought to the Richmond Hospital in order to have the limb removed. On examining the joint he found it in a flexed position, out of which the patient was unable to move it, the slightest attempt at motion being attended with agonizing pain. The tumefaction was great, and a number of large fistulous openings led into the interior of the joint, one of them passing directly to the head of the radius. This opening was sufficiently large to admit the top of the finger, and at the bottom of it the head of the radius could be felt. Under these circumstances his first idea was to remove the limb at once; but, as the arm was of so much importance to a patient who lived by her labour, he determined to give her a chance of retaining it. She was accordingly placed under treatment for a month; but ultimately he was obliged to remove the limb, in consequence of the inroads made on her constitution by the disease; on dissection it presented a fine specimen of the changes produced in a joint by the action of scrofulous disease. This disease usually commences in the articulating ends of the bones, from whence it ultimately extends to the cartilage, the synovial membrane, &c. When they looked at a joint in which the diseased action had been long going on, they would be disposed to think that the soft structures were first engaged, the disease having advanced much further in these than in the bones. But this occurred for a very obvious reason, namely, that all diseased action was more rapid in the former than in the latter. The end of the humerus was much changed in appearance, being greatly enlarged, irregular upon the surface, and somewhat softened. One of the most interesting features of the case was the appearance of the olecranon process. Though the patient was not more than thirteen years of age, the olecranon process in the affected arm was much larger than it is ever found in the adult subject. It was, therefore, to be borne in mind that, in cases of scrofulous disease of the bones, the latter may be found in a hypertrophied condition. The cartilages of the joint were almost gone, and their place, and the place of the synovial membrane, was occupied by a peculiar pulpy mass, which in some places might be removed with the finger. External to this the areolar tissue was consolidated by the effusion of lymph. There were also many fistulous openings, which burrowed between the muscles and fascia before they entered the joint. The bones were remarkably soft and light, and their cancelli were filled with a grumous fluid.

(*To be continued.*)

MEDICAL MISCELLANY.

Surgical Cases. By William Hargrave, M. B., Professor of Surgery to the Royal College of Surgeons in Ireland, Surgeon to the city of Dublin Hospital.

The following cases are submitted to the profession, as not being altogether devoid of interest, and for the purpose of recording the pathological condition of parts so severely injured:

1. *Dislocation of the Right Knee inwards.* Reported by Mr. Ainsworth.—John Taaffe, aged 48, a theatrical performer, was admitted into the City of Dublin Hospital at twelve o'clock, p. m., on the night of the 25th of April, 1849, under the care of Dr. Geoghegan.

It appeared that about an hour previous to admission, the patient, who was travelling in one of the carriages of the Atmospheric Railway, leaped from it whilst going at the rate of about twenty miles an hour, and dislocated his right knee; he also received a few slight abrasions about the face. Being intoxicated at the time, he cannot state the circumstances attending the accident, except that he recollects, after leaping from the carriage, he alighted with his feet on the ground.

On examination, great deformity of the right knee-joint is evident; the femur is dislocated inwards; the axes of the tibia and fibula running very much outwards, and these lines forming with the thigh a much less obtuse angle externally than natural. The inner condyle of the femur is very prominent; the integuments covering it are white, shining, tense, and cold, and there is a hollow below it into which the finger can be placed: the patella is pushed outwards, projects over the external angle, and is slightly moveable. The tibia is partially dislocated from the femur, the internal articulating surface of that bone being removed from the inner condyle, and looking obliquely upwards and inwards. Flexion and extension of the leg are perfect, and it can be made to form nearly a right angle, externally, with the femur, without causing much pain. Three abrasions are seen on the anterior part of the injured limb, and there is great pain on the slightest pressure about the joint.

Reduction was effected without much difficulty, by extension and counter-extension, the leg and thigh being in the extended position, and the bones pressed into their natural places; when they first regained their proper state, the tibia fell backwards, but was easily replaced. The limb was then put on the double-inclined plane, that position seeming best adapted for retaining the tibia *in situ*, simple dressing applied to the abrasions, and the whole secured by a bandage. At about two a. m., being restless and uneasy, he got twenty minims of Acetum Opii. The next morning it was reported that he had some pain about the joint, of an aching character, but not very severe;

tongue brown; complains of thirst; still smells strongly of spirituous liquors; pulse 88, and pretty good; a dusky kind of redness is visible about the patella, but the part is not unusually hot, nor is there any symptom of inflammation.

April 27th; third day. Pulse 84 and soft; tongue slightly brown; still some thirst; no sign of inflammation about the joint, but the dusky redness is still visible around the patella. The bandages were removed, and the parts examined. The inclination of the plane was lessened, and the bandages re-applied.

This patient was transferred to Dr. Hargrave by Dr. Geoghegan on May 4th; on the 8th instant an erysipelatous blush appeared on the limb; it took its origin from the abrasions already noted, but no marked constitutional symptoms were present. The parts were smeared with mercurial ointment, and saline diaphoretics, with the compound spirit of sulphuric ether, prescribed. On the 14th of May, the twentieth day, the erysipelas had entirely disappeared, and the ulcers on the fore part of the leg were healing; the general health was good; the leg was directed to be kept in the same position.

Everything seemed to promise favourably, when on the 24th, a month after the injury, a serious change was observed to take place, ushered in by several severe rigors, with occasional sickness of stomach; pulse 108; tongue slightly furred; thirst; bowels constipated, but *no unusual appearance* about the limb. He was ordered cathartics, with calomel and James' powder, and some aromatic spirit of ammonia. On the 25th, the report states that erysipelas appeared on the leg, extending from the ankle to the knee, attended with "stinging pains." The inguinal glands are also enlarged and painful on pressure; pulse 116, tolerably good; a slight tendency to sickness of the stomach, with anorexia and thirst.

He was ordered an effervescent mixture of bark, with tartar emetic; the limb to be smeared with the mercurial ointment, and eight leeches to be applied to the inguinal glands; a poultice afterwards.

On the following day the pain and swelling of the inguinal glands had considerably abated, but the erysipelas had extended up the leg and the inferior third of the thigh; there was also a slight, irregular, isolated blush higher up, along the course of the saphena vein, which felt hard and cord-like, and was painful on pressure: great swelling existed about the knee-joint, especially towards the inner condyle, with obscure fluctuation on this aspect of the articulation. Tongue brown; pulse 108, and somewhat weaker; no appetite; thirst; stomach inclined to be sick. A grain of calomel, with the sixth of a grain of the acetate of morphia, was ordered three times a day; eight leeches to be applied to the inner part of the thigh, and the bark to be continued. These medicines were persevered in, with a repetition of the leeches, until the 30th of May, when the report states that the hardness and tenderness in the course of the veins have disappeared since the application of the leeches; skin of the leg corrugated; thigh seems rather full, with conside-

rable œdema of the foot; fluctuation at the joint very evident, and the integuments thinning. He raves occasionally at night; tongue rather moist; pulse 106, and pretty full, though very compressible; appetite bad; some thirst. This morning the leg was lying out of its usual position, being semiflexed, attended with great deformity of the knee-joint, there being considerable prominence of the inner condyle of the femur, and a falling backwards of the tibia; in fact nearly all the symptoms of the original injury reproduced, showing that no adhesion had as yet taken place, nor any reparation of the ruptured ligaments of the joint. The parts were re-adjusted, and the limb placed in the extended position. The collection of matter about the knee-joint was opened, when a large quantity of thin fluid pus escaped. Aromatic confection and ammonia were added to the bark mixture, and nitrate of silver was applied to the limb, with the view of preventing the extension of the erysipelas up the thigh.

From May 31st to June 6th, considerable quantities of matter, somewhat improved in character, were discharged from the inside of the knee, and at the daily dressings the quantity was increased by pressure made on the internal side of the thigh, and also *in the popliteal region;* the erysipelas had ceased to extend. On the latter day the report mentions that the discharge from the punctures is rather less; there is a good deal of tenderness at the external part of the leg, with some redness and fluctuation, and the erysipelas has already disappeared. He still feels weak, but the countenance is better, and the appetite improved. An incision, two inches in length, was made at the external part of the calf of the leg, where the tenderness and fluctuation were felt, and a large quantity of serum, with some sero-purulent matter, was discharged; a poultice was then ordered to be applied. The limb was again lying out of its proper position, and the symptoms of dislocation were still manifest; it was placed on the double-inclined plane, and again secured.

June 11th. He has suffered since the last date from purging, with variation in quantity as to the discharge of matter, both from the inside of the knee and outside of the leg. This day's report states that the countenance is pale, and covered with cold perspiration; pulse 109, and weak; some purging; discharge from the puncture at the knee and from the leg less. The leg continuing swollen and œdematous, and the integuments about the middle of the internal part being rather red, with symptoms of fluctuation, and other signs of matter in that situation, a short incision was made, and a probe passed freely into it, when a quantity of serum and a small portion of sero-purulent matter issued. No abscess or purulent deposit could be detected, although the finger was passed deep into the parts.

From this time until his decease, which took place on the 17th June, decided hectic symptoms set in, with nocturnal and occasionally diurnal delirium. The skin covering the internal condyle of the femur gave way, exposing the corresponding surface of that part of

the bone, while pressure on the patella caused a discharge of matter apparently proceeding from the joint; the cutaneous ulceration increased, and in a few days exposed the cartilage of incrustation of the femur.

It may be here remarked that the patient stated that about nine years previously to this accident he had dislocated the left knee when fencing, and was under surgical treatment for nine weeks, the limb having been placed in the straight position; the movements of the joint were never perfectly recovered, as there was some limit to complete extension.

On *post mortem* examination, which was made by Mr. Freeland, the right limb presented the following appearances:—The foot was everted, and almost the entire of the internal condyle of the femur exposed through an opening which had been formed by the ulcerative process that was going on for some days before death. On examining the joint, the patella and its ligaments were sound; the cartilages of the femur were ulcerated on their inferior aspect, leaving about a quarter of an inch of the condyles bare; the ulceration on the external condyle was larger, and surrounded by a highly vascular fringe, which extended backwards as far as the origin of the posterior crucial ligament. The semilunar cartilages were somewhat vascular; the posterior crucial ligament entire and uninjured; the anterior ruptured across, about its centre; the internal lateral ligament was completely ruptured at its origin; the external lateral was partially torn.

An opening of about half an inch in length was found a little internal to the popliteal vessels, through which a probe might with facility be passed into the joint; pressure on the anterior part of the articulation caused an immediate flow of pus and serum from the aperture; the coats of the vessels in the immediate vicinity of the joint were thickened in a very evident manner, but their canals were perfect. Above the knee, as high as the hip-joint, and below, as far as the ankle, the whole of the areolar membrane was in a state of slough, and infiltrated with very fetid greenish pus; the muscles in the anterior femoral region were completely disorganized, and of a greenish hue; the femur was imbedded in and separated from the surrounding muscles by a large quantity of matter, and no evidence of a circumscribed abscess existed, the purulent fluid being diffused throughout every tissue; the periosteum around the femur was in many parts highly vascular and thickened(*a*). A dissection was also made of the left knee-joint, which the patient stated to have been luxated about nine years previously. On removing the integuments and superficial fascia from the thigh, the fascia lata, for about a third of its inferior portion, was found exceedingly thickened, particularly for an inch above the insertion of the rectus into the patella. The ligamentum patellæ was in its whole length somewhat

(*a*) This preparation is now in the pathological museum of the Royal College of Surgeons.

thicker than natural, but in other respects the parts around the joint were healthy. On opening the articulation, and throwing down the patella, it was seen *to be very much hypertrophied* in the antero-posterior diameter; its cartilage was in some parts rough. The alar ligaments presented a highly vascular edge, which was gradually lost towards each condyle. The ligamentum posticum of Winslow, as it passes between the heads of the gastrocnemius muscle, had apparently been ruptured and again united, having in that part an increase of size and induration. The rest of the articulation appeared to be healthy, and no satisfactory explanation was afforded by the examination to account for the loss of perfect extension of the leg which the patient experienced ever since the accident; unless it could be attributed to the injury sustained by the ligamentum posticum, which I think was insufficient to account for it.

From the injury inflicted on the right knee in this case, and the effects resulting from it, the only hope for the safety of the patient would have been amputation, in case there was a remission of the hectic symptoms; but that the operation would have been successful is more than doubtful, as, from the condition in which the muscles and the areolar tissue on the anterior part of the thigh were found to be, very little hope could be entertained of their ever assuming a healthy action; irritative and hectic fever would almost to a certainty make their appearance again, and continue their progress, uncontrolled, to a fatal termination; thus superadding suffering to injury, and bringing into disrepute that important department of medicine, operative surgery.

2. *Compound Fracture and Laceration of the Arm.* Reported by Mr. Ainsworth.—James Doyle, aged 29, a railway labourer, was brought into the City of Dublin Hospital at nine o'clock, A. M., on the morning of the 22nd day of June, 1849, and placed under the care of Dr. Hargrave. It appears that the patient was engaged in the performance of some duties at the factory, near the terminus of the Kingstown railway, about half an hour previous to his being brought here, when, by some incaution on his part, his arm got entangled in a revolving shaft, and sustained the following injuries:

The left hand and fully five inches of the fore-arm are torn completely off (a brother workman carried them in his apron); about three inches above the elbow-joint an extensive lacerated wound is seen, which has torn through the humerus and all the soft structures, leaving the two portions of the arm connected only by a small piece of the triceps muscle; this frightful-looking laceration extending obliquely from without inwards and downwards, has widely separated the two portions, and left the ends of the bone and lacerated parts of the muscles exposed to view; there was a continued free oozing of blood from the upper portion, but no distinctly marked flow from any particular point; to this part some lint dipped in turpentine was applied. As soon as Dr. Hargrave saw the patient he applied a tourniquet on the axillary artery; yet, although the vessel was fully commanded, the flow of blood continued.

A consultation was now held, when it was determined that amputation should be performed immediately. Accordingly, at eleven o'clock, A. M., Dr. Hargrave performed amputation of the arm, selecting the flap operation, and sawing the bone immediately below the tuberosities of the humerus. During the operation the patient appeared very weak, and his face looked pale and death-like; and when placed on the table he vomited the contents of his stomach, ejecting them *with great force.* Two sutures only were used, the lips of the wound being retained in apposition by strips of plaster. Very little blood was lost during the operation. He was placed in bed, and ordered twenty-five drops of tincture of opium, in an ounce of camphor mixture; cold lotions to be applied to the stump, &c. Two o'clock, P. M.—He had vomited once since the operation, but does not complain of much pain, and has dozed occasionally; the lips of the wound were brought into more perfect apposition by three more sutures; pulse 108, and pretty good. Nine o'clock, P. M.—Has dozed occasionally; no more pain than might be expected; thirst; wound looks healthy, but little action manifested as yet; pulse 112, and pretty fair; surface of natural warmth; has no desire for food. Ordered some ice, he refused to take any wine or stimulants, being a teetotaller.

23rd June, second day. Dozed occasionally till four o'clock this morning, from which time till eight o'clock he slept soundly; pulse 108, and pretty fair; skin natural warmth; tongue moist; complains of but little pain; is thirsty; wound looks well, but there appears a want of action in it; no desire for anything to eat or drink, but likes the ice. Three o'clock, P. M.—Seems weak and rather low; pulse 128, very small and weak; respiration hurried; perspiration about forehead; face pale; is restless; surface and extremities warm. He was ordered two ounces of wine immediately, and to be repeated if necessary. Seven o'clock, P. M.—Has taken three ounces of wine up to this time; pulse almost imperceptible at the wrist, higher up very thready, weak, and 130; respiration quick; copious perspiration on the forehead; feet rather cold; surface warm; restless; does not speak, but seems conscious; passed water some time ago. He now got two ounces of brandy, with the yolk of an egg beat up with it; also some aromatic spirit of ammonia and ether. Heaters were applied to his feet, and he was ordered chicken broth, to be given at intervals, also brandy and other stimulants if necessary. The cold lotion was discontinued; simple dressing applied to the wound. Half-past nine o'clock, P. M.—Has got an ounce of brandy since, and some chicken broth; pulse variable, occasionally not to be felt at the wrist; at other times perceptible, but thready, quick, and weak; respiration 44; copious cold sweating on the forehead and face; lips pale; eyes heavy and dim-looking; surface warm; has not spoken since, but seems conscious; ordered a stimulant mixture with brandy, yolk of egg, tincture of capsicum, and laudanum. He died at three o'clock, A.M. No *post mortem* examination could be obtained.

The death of this patient, forty hours after the amputation,

was unexpected, as he had rallied between Friday night and Saturday morning, both from the shock of the severe accident which had befallen him, and also from that of the operation, which was quickly performed and with the loss of not an ounce of blood. To delay the operation until his system had recovered more from the immediate effects of the injury was impossible, as the man was sinking rapidly from capillary hemorrhage, which no pressure nor application could control. Some years since I had another case of uncontrollable capillary hemorrhage, the result of a raking gun-shot wound along the fore-arm, which called for immediate amputation, an account of which I published in the ninth volume of the Medical Press. In the present instance it is possible that the compound or double shock of the accident and of the operation proved too much for the natural powers to overcome; still, if the operation had not been performed, he could not have survived the injury for the length of time recorded. His resolution, indeed I might say obstinacy, in refusing wine, when first ordered, being a teetotaller, certainly did not aid his system in its efforts to support itself under the trying circumstances in which it was placed; and when he did consent to take any diffusible stimuli, such valuable moments were lost, never to be regained, that the stimulants were of no benefit, even almost for a moment, in staying the fatal event. Could it be possible that any internal viscus was injured, and gave no external evidence of such a lesion? No indication existed of such being the case in the visceral cavities, which were examined during life.

In conclusion, I may notice, as not unworthy of being recorded, that some of the nerves composing the brachial plexus were unusually small, namely, the median, ulnar, and musculo-spiral; none of them being one-half their usual size: there was also a high division of the axillary artery.

Cases of Disease of the Urinary Organs. By Henry Thompson, M.D. Surgeon to the Tyrone Infirmary.

1. *Retention of Urine and Formation of Abscesses in the Testicles.*—John Lawn, aged 26, married, a labourer, hitherto healthy, was seized, about three weeks before his admission into the Infirmary, on the 22nd of March, 1849, with what he describes as a severe cold, attended with acute headach, chiefly affecting his forehead and ears. These symptoms, of which he gives a most unsatisfactory account, continued for about a week, and then subsided, when he found that he was unable to pass a drop of urine. He remained in great distress from this cause for about another week, when an unsuccessful attempt was made to pass an instrument, which only brought away a little blood. The retention has since continued; the overflowing urine dribbling away, accompanied, since the day before yesterday, by some brownish, muco-purulent matter, and by considerable enlargement of the testes, and an inflamed appearance of the scrotum.

On admission he presented the appearance of intense distress and anxiety; scarcely able to totter along, with his body bent forwards, and his legs widely separated; his features were sharpened; countenance sunken, and of a sallow, yellowish colour; eyes prominent and glassy, and emaciation extreme; clothes all wet, and exhaling an abominable ammoniacal odour. The tongue was dry and brown, and the pulse almost imperceptible. The lower part of the abdomen was occupied by a tense globular tumour, formed by the distended bladder, which reached to the umbilicus; both testicles were swollen to the size of hens' eggs, and tender on pressure; and the scrotum was œdematous, thickened, and of a dusky red colour.

As soon as he was got into bed, I passed a full-sized gum-elastic catheter, which seemed to enter the bladder very freeely, but was so obstructed by some obstacle within it, that no urine flowed. I therefore withdrew it, and passed a large silver instrument, when, feeling the obstacle with it too, I pushed it firmly on; a slight jerk ensued, as if it suddenly passed through something solid, and then the contents of the bladder, amounting to five pints of thick, brown, offensive fluid, with an occasional streak of blood, flowed off through it. When the flow ceased he complained of severe pain at the neck of the bladder and along the penis. He was then ordered a warm bath. In the evening the pulse was full and bounding, 120; and he was much inclined to sleep.

March 23rd. Slept half the night; passed a little water twice. The bladder is again distended, and the urine overflowing. The silver catheter was passed, and three pints of the same sort of urine flowed away. Towards the end of the evacuation it became more clear and natural in appearance. Tongue has a dry, red, circular spot, the size of a shilling on its tip; thirst not so great; pulse 78; skin of natural temperature.

25th. The instrument was introduced twice daily since; and last night he passed, by his own efforts, a considerable quantity of urine, which was clearer and more healthy. Had some castor oil yesterday, which opened his bowels; he is now bathed in perspiration; tongue clean and moist; little thirst; appetite returning; pulse 78; testes continue swollen; hard and painful swelling of scrotum diminished; they are kept enveloped in wet tow, covered with an oiled silk bag. The instrument was passed, and nothing but a little pus came away.

27th. Has passed water freely twice a day since. It still comes slowly; but he is able to relieve himself completely. Urine now clear and healthy; pulse 75; skin cool; tongue clean; appetite good. Matter having formed in the right testis, an opening was made, and about a dessert-spoonful of pus evacuated.

30th. Since last report passes water freely, of healthy appearance, and not oftener than natural. No discharge from urethra.

April 3rd. A second abscess having formed in the lower part of the right testis, it was opened to-day. The first incision, which was in the upper part of the gland, has healed.

6th. An abscess having formed in the left testis, it was opened to-day, and about half an ounce of healthy pus evacuated; general health improving.

9th. I passed a full-sized silver catheter this morning; some slight resistance was felt at the neck of the bladder: urine quite healthy.

13th. Right testis has regained its natural size and feel, with the exception of slight induration of the epididymis; left testis diminishing rapidly; wound healed; passes water as well as ever; rapidly regaining his flesh and strength.

14th. Discharged from hospital.

This man having gone to America soon after, I had no opportunity of discovering what effect the suppuration of the testes had upon his virile powers. The original cause of the attack of retention is somewhat obscure; but my opinion at the time was, that it had occurred towards the close of an attack of fever, which was either unknown to his friends, or which they wished to conceal, lest it should form an objection to his admission into a surgical hospital. This appeared to me to be the only cause likely to produce such an effect in so young a man, who was free from any disease of the urinary passages, or lesion of the cerebro-spinal system. The retention having once taken place, the over-distention of the bladder paralysed its muscular fibres, and rendered them incapable of performing their functions, although the original cause had subsided. But the chief point of interest in the case is the suppuration of the testes, an attendant on prolonged retention of urine which I have not seen noticed before, and which seems to be quite different from the sympathetic enlargement of this organ, so common as an effect of irritation of the urethra caused by gonorrhœa, gout, stricture, or the passing of bougies, and which is never known to end in suppuration, except where it becomes the exciting cause of scrofulous disease of this gland.

2. *Retention of Urine, from Abscess at the Neck of the Bladder.*—Archibald M'Collum, aged 35, previously healthy, though addicted to drink, and never having been affected with any venereal complaint, after exposure to cold and wet, about five weeks previously to his admission into the Tyrone Infirmary on the 26th January, 1849, began to experience some pain and difficulty in passing water, together with very great frequency, amounting sometimes to twenty calls in the course of the night. The pain was principally felt at the extremity of the penis, and along the passage. This day he experienced more difficulty than ever, and, fearing an attack of complete retention, was at last forced to apply for relief.

On examination I found the bladder distended, the penis semi-erect, no discharge from the urethra, and no swelling of the testis. There were some hardness and thickening, with considerable tenderness, around the urethra, where it passes under the arch of the pubis. He could pass but very little water at a time, and that with great forcing, the stream scattering in all directions. He was ema-

ciated ; countenance hollow and sunken ; skin hot ; pulse 90 ; a red, dry patch on the tip of the tongue, the remainder of it moist and clean.

I at once passed a small silver catheter, as far as the membranous portion of the urethra, where its progress was arrested, and immediately a gush of healthy pus issued from its extremity; about an ounce came away altogether ; and when I attempted to push on the instrument a little, blood appeared. I then had him placed in a warm bath, in which he passed some water with much greater ease, and in sufficient quantity to relieve the distended bladder.

January 27th. He slept more last night than he has done for the last five weeks altogether ; made water eight times, much more freely, and in greater quantity; no tumour now above the pubis; pulse 60; skin cool. He was ordered two grains and a half of Dover's powder, three times a day.

28th. Slept well ; made water about nine times since ; it now passes freely, and without pain ; has not had a call since five o'clock this morning. I passed a middle-sized gum-elastic catheter into the bladder without any difficulty, emptying it of about three ounces of healthy-looking urine. He felt some pain when the instrument was passing over the perineum and prostate, which subsided immediately on its being withdrawn.

30th. Had a dose of castor oil last night, which operated violently, and has much reduced his strength, and increased his haggard appearance; made water but six times in the last twenty-four hours, in a full stream, and without pain or difficulty. Ten o'clock, P. M.— Has had retention of urine since twelve o'clock to-day, and is now in great pain. A hot bath failed to relieve him, so I passed a gum-elastic catheter, through which, when it arrived at the membranous portion, about a table-spoonful of pus flowed, followed immediately by about half a pint of bloody urine. On withdrawing the instrument, he passed some clear, healthy-looking urine, with complete relief.

31st. The relief was but transient, as the desire soon returned, and he passed a night of great pain. The bladder is now quite full, and the bed wet with the urine which has been dribbling away. I introduced a gum-elastic catheter, which, on arriving at the neck of the bladder, stopped, and immediately a discharge of bloody pus, followed by bloody urine, took place, but without diminishing the tumour above the pubis ; by then withdrawing the instrument a very little, and suddenly depressing its handle, it entered the bladder, and twenty ounces of clear, healthy urine passed off, with complete relief. He passed water freely about three hours afterwards.

February 1st. Until about one o'clock last night, he did not make water oftener than three times ; after that he began to feel pain at the neck of the bladder, and calls to urinate more frequently, but he was able to relieve himself sufficiently to get some sleep. His bladder is not distended to-day, but he has frequent desire and pain in passing water; pulse 66; skin cool; no thirst; ap-

petite pretty fair; countenance haggard and sunken. I examined the prostate from the rectum to-day, and could discover nothing remarkable, nor did the examination give any pain; there is some fulness about the urethra, where it passes under the pubis, but no hardness or œdema, or anything to point out the situation of a collection of matter. I passed the instrument with exactly the same results as yesterday morning, the pus being in considerably smaller quantity, and only about eight ounces of healthy urine in the bladder.

2nd. He passed water but five times since; slept well; complains of severe pain along the penis and in the glans, after passing water. I endeavoured to introduce the same instrument I passed yesterday, but could get no farther than the neck of the bladder, from which the same purulent fluid and some blood escaped. I could not get it on by any manœuvre.

5th. Has passed water about six times every twenty-four hours since; the same quantity of pus has been brought away by the instrument every morning, but I was unable to get it into the bladder until to-day, when I succeeded by hooking the point close up under the pubis, and suddenly depressing the handle, and six ounces of healthy urine escaped.

8th. Same treatment continued, without any change, until last night, when he was again seized with complete retention. The instrument was passed, and the bladder emptied, at ten o'clock, P. M., after which he was easy until three o'clock this morning, when partial retention and frequent desire came on again. At nine this morning I passed the instrument; a quantity of thin, serous pus coming first, and then, on passing on the instrument, the bladder was emptied of healthy urine. Had an injection this morning, which opened his bowels.

9th. Slept well; up only twice, and then passed water very freely.

10th. Up but three times last night, and then passed his water pretty freely; his right testis has become swollen to about three times its natural size; there has been a slight discharge of pus from the urethra ever since the instrument was first passed; had a rigor yesterday, followed by perspiration; pulse 66 this morning; tongue has a dry, brown streak down the centre; does not complain of thirst.

13th. Instrument has not been passed since the 8th; makes water freely, and not more than five times in the twenty-four hours; swelling of testis diminishing.

25th. Has not required an instrument since; swelling of testis diminishing rapidly; constant discharge of pus from the urethra, but in small quantity, and chiefly after making water; complains of occasional pain in right iliac region, and pain and difficulty in defæcation; the finger in the rectum detects a large, hard tumour, engaging the right side of the prostate, which is very tender on pressure; he is much emaciated, and perspires occasionally; general health in other respects pretty good.

March 14th. Has not required the instrument since; his treat-

ment has been entirely dietetic, and he has gained flesh and strength; the discharge of pus from the urethra continues, but in daily diminishing quantity; the testicle has resumed its natural size; tumour of prostate much diminished, very hard, and has quite lost its tenderness. Left the hospital to-day.

April 3rd. Called on me to-day, much improved in health and strength; passes water freely, five or six times in the twenty-four hours, three or four drops of yellowish-white matter following each evacuation.

3. *Enlargement of the third Lobe of the Prostate, with Transposition of the left Kidney.*—Gilbert Glass, aged 70, was visited for the first time on the 26th September, 1849. He was then suffering from retention of urine, which had been dribbling away for the last four days. The bladder could, with great difficulty, be felt low in the cavity of the pelvis. He was suffering great distress, and severe attacks of involuntary forcing, during which he passed a spoonful or two of urine, but without any relief. He had an immense scrotal hernia of the right side; was much emaciated, and very weak; the skin hot, and the tongue dry. I immediately passed without difficulty a small-sized gum-elastic catheter, having previously increased the curve, and depressed it very quickly on reaching the neck of the bladder: about a pint of pale urine came away. He stated that he had suffered more or less from difficulty in passing water for the last twenty years, but never had complete retention before. From this date it became necessary to pass the instrument from two to four, and sometimes six times daily. The urine became loaded with pus. Urinary hectic set in, and terminated in death on the 4th of December, 1849.

The body was examined sixteen hours after death. On opening the abdomen the external appearance of the viscera was found healthy; the bladder, small and thickened, lay low in the pelvis. It, with the penis and urethra, were in a very hurried manner removed(*a*), and the bladder and urethra laid open, when the cause of the symptoms was indicated by the enlargement of the third lobe of the prostate, which projected into the bladder, and was of the size and shape of a sparrow's egg, forming a complete obstacle to the passage of the urine. The mucous membrane on each side was thrown into a fold, which formed a pouch looking towards the urethra, and explained the difficulty which was sometimes experienced in passing the instrument. The bladder was very small, and its muscular structure so thickened as to resemble a uterus at the fourth month of gestation. The mucous membrane was thrown into elevated folds, which crossed and interlaced each other, leaving deep cells between them, like the carneæ columnæ of one of the ventricles of the heart. The orifices of the ureters were enlarged; the ureters greatly dilated, and the whole mucous membrane pencilled over with a net-work of enlarged blood-vessels.

(*a*) There were very great difficulties in obtaining an examination of the body, and the friends were in an adjoining room during the operation.

There was no trace of a kidney on the left side. The right side of the abdomen contained a firm fleshy mass, extending from the concave surface of the diaphragm downwards through the right lumbar region into the bottom of the pelvis, where it was in contact with and attached to the posterior surface of the rectum. This mass was covered anteriorly by the peritoneum; and, on removing it entire, it was found to consist of the two kidneys, the upper one being about twice the size of the lower, and connected with it by a dense, reddish-coloured, areolar structure, resembling the remains of the renal capsule. As I was much pressed for time, I removed the whole without observing either the arrangement of the vessels or that of the ureter, not imagining that the lower part of the tumour could be a kidney. On cutting into it, however, its nature was very plain. The pelvis, with part of the ureter issuing from it, the calices, and infundibulæ were greatly dilated, and filled with pale-coloured, clear urine, with flakes of muco-purulent matter floating through it; the mucous membrane highly vascular; the cortical and tubular portions very distinct, but the former pale, to a great extent disorganized, and infiltrated with purulent matter. The upper portion of the mass consisted of the right kidney, more than double the natural size, and in a much more advanced state of disease than its fellow; there being no distinction at all discoverable between the different structures of the gland, all pale, softened, and infiltrated with pus, the membranous portions greatly dilated, the mucous membrane highly vascular, and the cavities all filled with purulent urine.

4. *Fungus of the Bladder.*—Lewis M'Erlane, aged 64, a broken-down, weak, emaciated old man, with a most painfully distressed expression of countenance, was admitted into the Tyrone Infirmary on the 8th July, 1849. He complained of great pain along the urethra, and at the neck of the glans, coming on chiefly after making water, which he was called on to do almost every ten minutes. The urine deposited a quantity of ropy, adhesive mucus, of a brownish colour, mixed with lymphy shreds, and occasionally dotted and streaked with blood.

There is a firm, solid tumour to be felt above the pubis, in the region of the bladder, and which inclines to the side he lies on. It is rather tender when pressed on, and does not vary in size; is not perceptible to the eye, and has not hitherto attracted his own notice. It is of an ovoid shape, somewhat larger than a goose egg, and can be felt from the rectum projecting backwards above the prostate, which is also somewhat enlarged. The tongue white and dry, brown at the tip; skin cool; pulse 84; complained of pain and weakness across the loins. The disease commenced about two years before, when, after making water, he suddenly felt pain at the neck of the bladder, which subsequently returned whenever he made water; the desire became more frequent, the pain more harassing; and, from having been previously healthy and strong, he began to lose flesh rapidly, and since then the symptoms have been gradually getting worse.

A gum-elastic instrument of full size was passed into the bladder; it brought away about two ounces of pale urine, with thin brownish flakes floating through it, without diminishing in the least the tumour above the pubis. The bladder was subsequently washed out with warm water, and injected with a two-grain solution of nitrate of silver, without any effect being produced on the local symptoms, which continued much the same. His general health, however, gradually became worse under the influence of a low fever, accompanied by intense thirst, which terminated his life on the 9th of December, 1849.

On opening the abdomen, the bladder was found rising out of the pelvis in the form of a soft, solid tumour, somewhat larger than a goose egg. It was of a deep, brownish-red colour. On pressing it, some thick, whitish, purulent matter, escaped from the urethra. The abdominal viscera had a dark, congested appearance; and the large intestines contained a considerable quantity of scybalous fæces.

On removing the bladder and laying it open, its coats were found thickened, the lining membrane having been converted into a soft, lobulated, fungous mass, which completely obliterated the cavity of the viscus; the colour was reddish-brown, and the surface of the lobules was covered with a loosely adhering pellicle of a lighter colour, similar to what was passed with the urine. The interstices of the lobulated mass were filled with a thick, creamy matter. The prostate was very slightly larger than natural, and the urethra was perfectly free from obstruction of any kind. The kidneys were rather atrophied, but otherwise healthy, and the ureters were healthy.

SELECTIONS FROM BRITISH AND FOREIGN PERIODICALS.

Formulæ employed by M. Ricord *in the Treatment of the various Forms of Syphilis.*

The following summary of the plan of treatment adopted by this distinguished French surgeon, in venereal diseases, cannot fail to prove interesting to our readers.

Non-malignant Varieties.—1. Inflammation of the glans penis and prepuce: Injections of the following solution are to be made three times a-day between the prepuce and the glans: Nitrate of silver, twelve grains; distilled water, one ounce. 2. Abortive treatment of gonorrhœa: A single injection is to be made with the following solution: distilled water, one ounce; nitrate of silver eight grains; and this powder to be taken *three* times daily: cubebs, two

drachms and a-half, and powdered alum fifteen grains; mix. 3. Injection for gonorrhœa when the period for the abortive treatment is past: Rose water, six ounces; sulphate of zinc and acetate of lead, of each twelve grains; to be used three times a-day. 4. Internal treatment of gonorrhœa: Balsam of copaiba, syrup of tolu, syrup of poppies, of each one ounce; mint water, two ounces; gum Arabic, as much as may be sufficient; orange-flower water, half an ounce; to be made into an emulsion, of which a table-spoonful is to be taken three times a-day. 5. Acute stage of gonorrhœa: Twenty leeches to the perineum, followed by a warm bath, cooling drinks, confinement to bed, low diet; to use a suspensory bandage, and to take four times a day one of the following pills: Lactucarium and camphor, of each two scruples, to be made into twenty pills. 6. Gleet (goutte militaire): The following injection to be used three times daily: Rose water and red wine, of each six ounces; alum and tannin, of each eight grains.

Malignant Varieties.—*Primary Symptoms.* 1. Abortive treatment of chancre: During the first five days after contagion, destroy the chancre with Vienna paste. 2. True chancre not indurated: Frequent dressings with aromatic wine; extreme cleanliness; occasional light cauterization with nitrate of silver; rest; emollient drinks. When inflammation exists, antiphlogistics, purgatives, emollient applications. (No mercury). 3. Phagedenic chancre: Complete cauterization with nitrate of silver, acid nitrate of mercury, potassa cum calce, or the actual cautery, according to circumstances. In a more advanced stage, lotions composed of aromatic wine, three ounces and a half, and extract of opium, two grains and a half; or aromatic wine, eight ounces, and tannin, twenty-four grains; or, in the scrofulous diathesis, distilled water, three ounces and a half, and tincture of iodine, one drachm; or the application of sulphur ointment, and the use of sulphurous baths. Internally: Tartrate of iron and potash, one ounce dissolved in eight ounces of distilled water, of which one ounce is to be taken three times a day. 4. Indurated chancre: Three dressings daily with the following ointment; Calomel, one drachm, and lard, one ounce; mercury to be given internally. 5. Abortive treatment of bubo consequent on the absorption of the virus of a non-indurated chancre: Deep cauterization with potassa cum calce, to be continued for ten minutes; the separation of the eschar is to be promoted. 6. Bubo consequent on indurated chancre: Antiphlogistics are to be employed according to circumstances, and vents must be given to the purulent matter by cauterization with caustic potash; the glandular mass situated at the bottom of the opened bubo is subsequently to be gradually destroyed by caustics; an ointment composed of equal parts of extract of belladonna and mercurial ointment may be added to the poultices after cauterization. 7. Horse-shoe bubo, and gangrene: For the former the same treatment is to be adopted; for gangrene, lotions with the following mixture: Chloride of lime, one ounce; distilled water, three ounces and a half; or the application of a

powder composed of equal parts of prepared charcoal and powdered cinchona bark.

Secondary Syphilitic Symptoms.—A spoonful of compound syrup of sarsaparilla to be taken three times a day in a glass of decoction of soapwort leaves; one of the following pills to be taken daily: Protoiodide of mercury, and lactucarium, of each thirty-five grains; extract of opium, twelve grains; extract of hemlock, one drachm and a half; to be divided into sixty pills.

Tertiary Syphilitic Symptoms.—A spoonful of the following syrup to be taken three times a day, in a glass of decoction of soapwort: Syrup of sarsaparilla, thirty ounces, and iodide of potassium, one ounce.

Scrofulous Complications.—The following emulsion is to be given in three doses: Iodine, two grains and a half; oil of sweet almonds, one ounce; gum Arabic as much as may be sufficient; almond emulsion, three ounces and a half.

Mercurial Stomatitis.—Decoction of lactuca sativa, five ounces; honey, half an ounce; hydrochloric acid, fifteen drops; to be made into a gargle to be used three times a day.

Salivation.—One drachm of flowers of sulphur, mixed with honey, to be taken daily; water acidified with nitric acid, and sweetened, to be used as ordinary drink. The following gargle to be used three times a-day: Decoction of lactuca sativa five ounces; honey, one ounce; and hydrochloric acid, fifteen drops.

Aphthæ in the Mouth.—Decoction of hemlock, six ounces and a half, and bichloride of mercury, two grains and a half; to be used as a gargle three times a day.

Warts are to be sprinkled twice a day with a powder composed of equal parts of savin, oxide of iron, and burned alum.—*Gazette des Hopitaux*, February 9, 1850.

Reybard's Operation for Paracentesis Thoracis modified. By M. Trousseau.

The patient is to be placed on the edge of the bed, taking care that he shall experience the least possible motion, in order that the portions of false membrane, which would otherwise be detached, may not float in the fluid and obstruct the canula; the trunk should be elevated. Having placed the patient in this position, an imaginary line is to be drawn from the anterior edge of the axilla to the level of the eighth rib, a little behind which spot the puncture should be made. A small incision is first made with a lancet through the skin, as if for the operation of venesection; the integument is then to be drawn upwards with the fingers, so that the incision may correspond to an intercostal space. The canula is passed through the centre of a circular piece of goldbeater's skin or pig's bladder previously moistened, which is then tied firmly round its neck, so as to project over the orifice for some distance. The trocar and canula thus armed are pushed into the chest where the skin had been cut, to the depth of an inch or an inch and a half. As soon as the ope-

rator feels the canula grasped by the muscles, the trocar is to be withdrawn, when the fluid gushes out. If a shred of membrane or an albuminous flake opposes the passage of the liquid, a double-eyed gum-elastic probe, of a little less caliber than the canula, is procured. The goldbeater's skin is to be partially opened, and the probe introduced into the canula; it removes the obstruction, while its eyes give passage to the fluid. This method was devised by M. Lenoir. The removal of the fluid must be assisted by steady pressure on the abdomen and on the chest; and when it has ceased to flow, the trocar is to be rapidly withdrawn. The skin instantly falls back, the superficial and deep openings no longer correspond, and the only dressing required is a small piece of court-plaster over the wound. At the same time that you relax the chest and abdomen, the air, drawn in by the tendency to a vacuum in the cavity lately filled with serum, rushes through the bronchial tubes, extending them and expanding the lung, which partly resumes its normal dimensions, allowing the respiratory murmur to be again heard over two-thirds of the chest, provided the effusion was recent and the adhesions not very firm.—*Journal de Médecine et de Chirurgie Pratiques*, March, 1850.

[The intention of this mode of operating is to prevent the admission of air into the pleural cavity during the operation, when the patient inspires; the moistened goldbeater's skin or bladder closing up the orifice the moment there is the least cessation of the flow of liquid, the escape of which, however, it does not prevent. The spot selected for the puncture is much too low down; we prefer the intercostal space between the fifth and sixth ribs.]

Remarks on Vermifuges. By M. Cazin.

Dr. Cazin, of Boulogne-sur-Mer, having had the opportunity of treating a large number of worm cases, has published the following interesting account of his experience. He states that he has frequently employed the common Spigelia or worm-grass. He administers it in the form of decoction, prepared by boiling two drachms of the herb in a quart of water to one-half. The decoction is then expressed, strained, and flavoured with a little lemon-juice and a sufficient quantity of sugar. The dose for an adult is two wine-glassfuls, followed by a wine-glassful every six hours until the desired effect is produced. To children and delicate persons a smaller quantity is to be given.

Wormwood (Absinthium) is an excellent indigenous anthelmintic; it is also a powerful tonic and stimulant, the use of which, continued after the expulsion of the worms, prevents their reproduction. M. Cazin often uses a wine prepared by digesting an ounce of wormwood, with an equal quantity of garlic, in a bottle of white wine, of which he gives from one to three ounces every morning. This wine is well-adapted for poor lymphatic subjects, wasted by wretchedness, and suffering from the influence of a marshy soil. The Absinthium maritimum is likewise a very good anthelmintic. M. Cazin gives it to the extent of one or two drachms boiled in four or five ounces of

water, with the addition of some white sugar, or of any anthelmintic syrup. This is quite a popular remedy in the maritime districts, and almost always succeeds with children affected with worms.

Although a case of poisoning by Cevadilla has been reported, M. Cazin has administered this vermifuge with success in cases in which ordinary anthelmintics had but little effect; but he has always commenced with a very small dose, in order to ascertain how far it would be borne by the digestive organs. For children the dose of this plant is from a grain and a half to four or five grains of the powder of the seeds, mixed with syrup of rhubarb; for adults eight or nine grains, with the addition of a little sugar and a few drops of oil of fennel. In each case the dose is to be repeated daily for four days, after which the infusion of chamomile is to be given.

Assafœtida possesses acknowledged anthelmintic properties, and is suitable for cases of sympathetic nervous affections produced by the existence of worms. It thus, like valerian, fulfils a twofold indication. In a case of nervous affection, which M. Cazin believed to be idiopathic, the administration of assafœtida both determined the disease and revealed its true cause, by effecting the expulsion of a number of lumbrici. This result has, in three cases of chorea and in two of epilepsy, enabled him to recognise that sympathetic irritation, depending on the presence of intestinal worms, was the sole cause of disease in these instances. Under ordinary circumstances M. Cazin frequently combines assafœtida with calomel in pills. This combination, of all those that he has employed, succeeds best in expelling lumbrici. He has also combined it with black oxide of iron, particularly in anemic patients. Assafœtida may be given in powder, in doses of from four grains to half a drachm.

The essential oil of turpentine is not merely useful in cases of tænia, it is also decidedly efficacious in expelling the lumbrici. M. Cazin has sometimes, in cases of lumbrici and ascarides, administered with advantage turpentine enemata, prepared by suspending, by means of yolk of egg, from one drachm to half an ounce of the oil in decoction of tansy, absinthium, worm-seed (semen-contra), or Corsican moss.

Common salt is very destructive to worms; it is given alone in large doses dissolved in water; it should be taken on an empty stomach. M. Cazin also frequently administers it in the form of enema, with brown sugar, linseed or poppy oil, and a sufficient quantity of water. With children it almost always succeeds.

Like all tonics, iron has the advantage of destroying worms, at the same time that, by imparting tone to the intestines, it prevents their reproduction. From six to eight grains of iron filings, mixed with an equal quantity of rhubarb, and taken twice or three times a day, have often been sufficient to expel the worms contained in the intestines. M. Cazin succeeded in rapidly curing a boy nine years of age, emaciated and pale, whose sleep was disturbed, and who was suffering from spasmodic movements similar to those which characterize chorea, by the exhibition of pills of sulphate of iron, combined, according to Fuller's formula, with aloes, senna, &c., under which

treatment he voided twenty-three lumbrici in four days. He has also used with remarkable success Bosen's mixture, containing extract of black hellebore and sulphate of iron. But what he chiefly gives to children, as well as to adults, is the syrup of citrate of iron (four parts of citrate to sixty of simple syrup, and one of essence of lemon), in doses of from two drachms to half an ounce to children, and from half an ounce to two ounces to adults.

M. Cazin remarks that calomel, so efficacious as an anthelmintic, ought never to be combined with an alkaline chloride, as the formation of corrosive sublimate would probably ensue from their admixture. In like manner, the combination of calomel with cherry-laurel water, or emulsion of bitter almonds, would give rise to the development of two formidable poisons, corrosive sublimate and cyanide of mercury.

The effects of the male fern, tin, pomegranate bark, hellebore, &c., require merely to be noticed; and the properties of the pomegranate root bark are so well known that they need not be dwelt upon. M. Cazin has remarked nothing particular respecting other anthelmintics. He merely says that cod liver oil has succeeded with him in the cases of two females, one of whom passed twelve lumbrici the same day that she had taken in the morning three table-spoonfuls at intervals of an hour.

But, whatever be the medicine selected, we must not, like routine practitioners, be content, when the worms are killed and dislodged, with this merely palliative cure. A very important indication remains to be fulfilled, viz., to prevent their reproduction. This object is attained, according to M. Cazin, by the adoption of a tonic and stimulant regimen, which must be long continued, and, above all, by the employment of bitter and chalybeate preparations. He has found the ferruginous chocolate to be sufficient, in the case of children, to prevent the relapses which are for many years very apt to occur. Wine taken while fasting has succeeded with the poor inhabitants of the marshes, accustomed to live only on vegetables and milk; and he has also remarked its efficacy as a preventive of worm affections in other instances.

To these observations of M. Cazin, the editor of the *Journal de Médecine* has appended the following practical remarks. The number of experiments tried by M. Cazin leaves no room for doubt respecting the enormous amount of worm affections which he must have met with. Such a result may appear strange to Parisian physicians, who attribute to the presence of worms in the intestines only a very trifling influence over the symptoms formerly ascribed to them. But if worm affections are rare among the inhabitants of large towns, they are frequent and generally more serious among the peasantry, and particularly among those who are poor and placed in unfavourable hygienic circumstances. We shall, therefore, take the present opportunity of mentioning the efficacy of *brown santonine*, lately brought under the notice of the readers of the *Bulletin de Thérapeutique*, by M. Gaffard, an apothecary at Aurillac.

The difficulty experienced in procuring pure santonine, both on account of its high price, and for other reasons, has induced M. Gaffard to endeavour to obtain from *worm-seed*, a product which may possess the advantages of the former, and at the same time be free from the objections to the use of the latter. This product he calls brown or impure santonine; it is obtained in the following manner:

Take of Aleppo worm-seed, three ounces; carbonate of potash, one ounce; slacked lime, sifted, half an ounce; water, from three pints to three pints and a half. Place the mixture on the fire, stirring occasionally with a wooden spatula; let it boil for an hour; on removing it from the fire pass it with expression through a linen cloth, let it settle, decant, and add hydrochloric or nitric acid until it reddens litmus without being sensibly acid to the tongue. Allow it to rest, pass it through a filter previously moistened, or through a piece of close canvas, and allow the product which remains on the filter to dry in the open air until it acquires the consistence of firm butter. This product, which is a mixture of santonine, resin, and essential oil, will answer for the various pharmaceutic forms in which the practitioner may wish to exhibit it. M. Gaffard gives it in the form of lozenges composed as follows:

Brown santonine, three drachms; powdered sugar, thirteen ounces; powdered gum, one ounce and a half; essential oil of lemon, twenty-five drops. Place the brown santonine in a marble mortar; add by degrees, and with constant trituration, the sugar mixed with the essential oil and the gum, so as to make a homogeneous powder. Form with a sufficient quantity of water a mass of the desired consistence, and divide it into lozenges, each of which shall weigh, when dried, fifteen grains; each lozenge will then contain somewhat more than one-third of a grain of brown santonine.

For infants under six months the dose will be one lozenge night and morning; from six months to a year, two lozenges night and morning; from one to two years, three, and from two to four years, four night and morning; for children of five years and upwards a lozenge for each year of the child's age should be given night and morning. The medicine to be continued until the desired effects are no longer produced.—*Journal de Médecine et de Chirurgie Pratiques*, March, 1850.

[A remedy for tape-worm, which has been for some time employed in France under the name of kousso, has been recently tried in King's College Hospital, London, with marked success. It is an infusion of the dried flowers of the Brayera anthelmintica, a native of Abyssinia, in which country it is a popular remedy for this worm, which is very prevalent amongst the inhabitants. A single dose, which is prepared by macerating for a quarter of an hour half an ounce of the dried flowers powdered in half a pint of luke-warm water, is taken at a draught, the suspended powder being all swallowed. Lemon juice may be taken before and after the dose. It usually brings away the worm in an hour or two after it has been taken. Those who have tried this remedy state that it is equally safe as effectual; and the only objection to its employment is its high price at present.]

MEMOIR OF THE LATE RICHARD CARMICHAEL, F. R. C. S. I.

It has been often truly remarked that an account of the life of a medical practitioner, let him have attained even the highest position, presents but little to interest the general reader. Necessarily devoid of the varied and brilliant incidents which so commonly chequer the career of the churchman, the lawyer, the politician, or the pure man of letters, who may have obtained eminence in their several walks in life, it can exhibit little more than the scenes consequent on the routine practice of an art devoted to the relief of that suffering and pain which are the ordained lot of man. Yet for these very reasons it attracts the attention of the labourers in the same career, who are struggling through the field that has been already successfuly trodden; and medical biography possesses peculiar charms for the profession. With this view our medical brethren must have seen that a portion of the pages of the present series of our Journal has been devoted to this subject, and the lives of those who are no longer of our time, but whose examples should live in our memory, are sedulously preserved. Some of these bright lights in the history of medicine adorned ages that have long since passed away, and some have been our contemporaries,—our friends; but among all we cannot point to one whose name should more deservedly adorn the pages of medical history than that of him whose biography we are now about to sketch.

Mr. Carmichael's family, as the name indicates, is of Scottish extraction; the branch which settled in Ireland was directly descended from that in which the earldom of Hyndford, now extinct, existed, and the idea of claiming the title for his elder and surviving brother, for a long time seriously engaged the attention of the subject of the present memoir, but the loss and destruction of some family records presented an insurmountable bar to the legal proof requisite, in the investigation of which he spent much time, and, when he had acquired wealth, expended much money. His father, Hugh Carmichael, was a practising solicitor, residing in Dublin, and holding the appointment of Deputy Clerk of the Crown for the counties of Meath, Louth, and Drogheda. Richard, the fourth son, was born in Bishop-street, in this city, on the 6th of February, 1779. His education was intrusted to the Rev. John Fea, at that time a literary teacher of eminence; but we cannot learn that in his early days his habits foreshadowed the high position he afterwards attained.

In 1794, Richard Carmichael was, in his fifteenth year, bound apprentice to Mr. Peile, being one of the many celebrated men whom the present father of Irish surgery has educated. After serving two years only of his apprenticeship, he passed his examination as assistant surgeon; thus evidencing in his youthful days those habits of industry and application which in after life tended

to retain him in that eminent position to which his talents so rapidly led him, and which he enjoyed until his sudden death, "in spite," to use the words of a previous biographer, "of several occurrences in his history which would have shaken most men from it." His medical education was entirely conducted in the then school of the College of Surgeons in Ireland; and by a diligent attendance in the clinical wards of the extensive hospitals attached to the House of Industry, which are now known as the Richmond, Hardwicke, and Whitworth Hospitals, he first laid up those stores of practical information, the effects of which were afterwards so manifestly shown in his various writings.

Shortly after passing the requisite examination above referred to, he was appointed assistant surgeon to the Wexford Militia, holding, as was then usual, an ensign's commission also. On appointment, he was sent to take charge of the detachments in out quarters; but the skill and attention he displayed soon attracted the notice of his superiors, and the surgeon was ordered to relieve him, while he was stationed with the head quarters of the regiment, the sole medical care of which was intrusted to him, then but little more than in his boyhood. He was afterwards appointed to the medical staff at Duncannon Fort, and finally left the service on the reduction that ensued after the peace of Amiens. In the year 1800 he passed his examination, and obtained the diploma of the Irish College of Surgeons, and in the year 1803 he settled to practise in Dublin.

Mr. Carmichael at once entered ardently into the laborious duties of a metropolitan practitioner, omitting no opportunity, and sparing no labour to acquire practical knowledge, as the fruit of which he rapidly attained a distinguished position in his profession. The first public appointment he held was that of surgeon to St. George's Hospital and Dispensary, to which he was elected in the same year that he came to reside in Dublin. While attached to it he carried on his inquiries into the nature and treatment of cancerous disease, a subject which engaged his attention throughout the whole of his subsequent career. These led to the publication of his first volume, in 1806(*a*), *a second edition* of which appeared in 1809. In it he advocated the independent life of cancer, attributing a vital existence to the cartilaginous septa and processes, which radiate amidst the surrounding cellular substance and glands: this carcinomatous animal he regarded as a kind of zoophite or polypus. The remedy he proposed for its destruction, and the consequent cure of the disease, was the carbonate (sesquioxide) of iron, which he employed as a local application, and at the same time administered internally, stating that he was led to its use from believing that, as

(*a*) An Essay on the Effects of Carbonate of Iron upon Cancer, with an Inquiry into the Nature of that Disease. By Richard Carmichael, Member of the Royal College of Surgeons in Ireland, and Surgeon of St. George's Hospital and Dispensary. 8vo. pp. 116.

iron was effectual in destroying intestinal worms, it might be equally destructive of other parasitical animals. These views were not so opposed to the state of knowledge of pathology which then existed, as the position it has since attained—chiefly by the aid of chemistry and histology, sciences then in their infancy—might lead us to suppose; and although they were regarded as somewhat novel, the reviewers of the day received them with respect, and spoke highly of the talents and attainments of the author(*a*). To this the research displayed in the history of the disease, and the account given of the various remedies that had been employed in all ages in its treatment bear sufficient evidence. He also published a short paper on his farther experience of this and the other preparations of iron in the disease in the first volume of the Dublin Medical and Physical Essays, in 1807. In the same volume of this Journal, at p. 299, is contained a communication, which is stated to be from an anonymous correspondent, but which bears internal evidence of being from the pen of Mr. Carmichael, in which "proposals for establishing a cancer hospital are submitted to the public." The following quotation from the introduction will show what enlarged views he then held, and by what philanthropic motives he was actuated: "The advantages which must result from a cancer hospital for the admission and relief of the poor, being considered by a few individuals who are anxious to establish so desirable an institution, they hope that others may be induced to co-operate in the undertaking, if a short detail of the benefits to be expected were laid before the public. The object in view is not only to investigate a disease so long supposed incurable, and to prove the virtue of every remedy hitherto in use, or that our increasing knowledge shall deem worthy of a trial, but to relieve or restore to health patients whose cases are not incurable, and to offer an asylum to others who are precluded by the hopeless and offensive nature of their disease from admission into the other charitable institutions of this country."

In the year 1810 Mr. Carmichael published an "Essay on the Nature of Scrofula, with Evidence of its Origin from Disorder of the Digestive Organs; illustrated by a Number of Cases successfully treated, and interspersed with Observations on the general Treatment of Children." In this year he was appointed one of the five surgeons of the Lock Hospital, in the wards of which he was enabled to mature and practically test those ideas on syphilis, and on the use and abuse of mercury in its treatment, which he afterwards gave to the world in his great work, the first edition of which appeared in 1814(*b*). It is on the views here propounded, which were

(*a*) See Edinburgh Medical and Surgical Journal, vol. ii. p. 372.

(*b*) An Essay on the Venereal Diseases which have been confounded with Syphilis, and the Symptoms which exclusively arise from that Poison, illustrated by Drawings of the Cutaneous Eruptions of true Syphilis and the resembling Diseases. By Richard Carmichael, M. R. I. A., President of the Royal College of Surgeons in Ireland, and one of the Surgeons of the Lock Hospital. 4to, part i. pp. 121; part ii. pp. 116. London, Longman, 1814.

variously modified, but never altered, in the many editions through which the work subsequently passed, and in his published clinical lectures on the disease, that the fame of Mr. Carmichael as an original observer, a correct investigator, and a sound practical surgeon, principally rests. Of these views we need not here enter into any detailed account, for they are, to the profession, "familiar as household words;" but we cannot avoid expressing our decided opinion that the true discrimination of the various forms of syphilitic disease, and the caution in the use of mercury in its treatment,—so remarkable when contrasted with its abuse in the days when he wrote,—which now so universally prevails amongst surgeons, must be chiefly ascribed to their promulgation. His ideas met with much opposition from the writers of the day, and especially from the Edinburgh school. The Edinburgh Medical and Surgical Journal, the then exponent of the views prevailing there, reviewed the first edition of his work with great severity, yet in concluding paid the following compliment to the youthful author: "We shall recommend this treatise to our readers as a repository of valuable cases, and as contributing to accelerate the progress of opinions relative to the treatment of diseases which are constantly mistaken for syphilitic affections by the majority of those practitioners whose education has been somewhat limited, and as tending to open the eyes of many to the actual variety both of primary and constitutional symptoms in which mercury is not required"(*a*). To this review Mr. Carmichael wrote a reply, which the Editor inserted in the same number of the Journal, and which occupied no less than twenty of its pages. In it he gave a masterly exposition of the doctrines he propounded, and pointed out the errors of the reviewer in a manly, vigorous, and logical style, free from any acerbity that might not unnaturally have been engendered by the strictures of the critic.

Mr. Carmichael was appointed one of the surgeons of the Richmond, Hardwicke, and Whitworth Hospitals, and House of Industry, in 1816. This appointment he held until 1836, when, on resigning it, he was nominated consulting surgeon. The circumstances attending his resignation deserve to be noticed, as a proof of how little he permitted professional jealousy to influence his actions, and of the kindly feelings towards such of his professional juniors as had gained his confidence, or whose talents he esteemed, by which his conduct through life was actuated. On the death of Mr. M'Dowell, one of the surgeons to the hospital, Mr. Adams and Dr. Macdonnell seemed to have had nearly equal chances of succeeding to the vacancy, when, to prevent any clashing of interests between them, and to secure the appointment of two good surgeons to the institution, Mr. Carmichael, by his resignation, made a second vacancy. The office of consultant he retained until his death, and as such gave regularly every winter, when his health permitted, clinical lectures on his

(*a*) Vol. xi. p. 380.

favourite subjects,—scrofula, cancerous diseases, and syphilis ; on the latter disease he gave a regular course in the winter session of 1848–9, the one before his death.

In 1826 Mr. Carmichael, in conjunction with Mr. Adams and the late Mr. M'Dowell, founded the School of Medicine which now bears his name, but which attained the high character it so deservedly acquired as the Richmond School. He lectured on surgery in it, the introductory lecture to the first course of which he gave on the 8th of January, 1827; he also opened the school with an introductory address at the commencement of the second session, both of which lectures were published. But he ceased to be connected with the school as a proprietor after two years, not liking the restraint imposed on his style and matter by the shackles of a systematic course of lectures; he, however, lectured afterwards occasionally for many years on his favourite clinical topics, on stricture, and on the operative department of surgery. For the last eight years of his life he gave £50 annually to the school, to be distributed in premiums amongst the students, and by his will he has left £2000, as a premium fund, for the same purpose, the yearly interest of which is to be thus disposed of. We may here mention, also, as one of his acts of professional liberality, his bequest of £8000, under certain regulations, for the improvement of this school of medicine.

Very early in life Mr. Carmichael attained a high position, and filled important offices, in the Royal College of Surgeons in Ireland. In 1808, when only in his twenty-seventh year, he was one of the censors, and a member of the Court of Examiners; and in 1813, but ten years after he settled as a practitioner in Dublin, he was elected President; and to this high office he was twice subsequently nominated, namely, in 1826 and 1846.

We have already glanced at some of his many publications(*a*);

(*a*) The following is, we believe, a complete list of Mr. Carmichael's writings :—

1805. Case of Strictures in the Urethra removed by the Caustic Bougie, with an Account of the Appearances on Dissection Eighteen Years afterwards. Edinburgh Medical and Surgical Journal, vol. i.

1806. An Essay on the Effects of Carbonate of Iron upon Cancer, with an Inquiry into the Nature of that Disease. One volume, 8vo.

1807. Observations on the Effects of the Preparations of Iron in Cancer. Dublin Medical and Physical Essays, vol. i.

1807. Observations on Cataract and Strabismus. Dublin Medical and Physical Essays, vol. i.

1807. On the Opacity of the Cornea. Dublin Medical and Physical Essays, vol. i.

1808. A Case of Strangulated Femoral Hernia, with Observations. Dublin Medical and Physical Essays, vol. ii.

1809. Observations on Anchylosis. Edinburgh Medical and Surgical Journal, vol. v. p. 185.

1809. Second Edition of Essay on Cancer.

1810. Essay on the Nature of Scrofula, with Evidence of its Origin from Disorder of the Digestive Organs, illustrated by a Number of Cases successfully treated, and interspersed with Observations on the general Treatment of Children. One volume, 8vo.

they were chiefly restricted to purely practical subjects in medicine or surgery; but for many years before his death he turned much of his attention to the question of medical reform, and wrote some essays on it. In his published lectures, already referred to, he expressed very strong opinions against the apprenticeship system, which then formed a necessary part of the education of candidates for the diploma of the Irish College of Surgeons. No matter what our sentiments may be as to the results which have followed from the repeal of the by-laws on this subject that then existed, we cannot avoid expressing our belief, that it was to the agitation carried on by Mr. Carmichael this change must be ascribed. He also entertained very decided views on many questions connected with medical politics and medical ethics; these he always expressed openly and fearlessly, regarding not the effects which such a line of proceeding might have on his own professional interests; in this respect, at least, showing a noble example of firmness of character, for which, indeed, he was remarkable in both public and private life. We are not, in this brief memoir, about to enter on the stormy sea of medical politics, nor do we wish to revive the angry feelings which the discussion of these matters so frequently gave rise to, but, in justice to his memory, we

1814. An Essay on the Venereal Diseases which have been confounded with Syphilis, and the Symptoms which exclusively arise from that Poison, illustrated by Drawings of the cutaneous Eruptions of true Syphilis and the resembling Diseases. One volume, 4to.

1815. Letter in reply to the Reviewer of the above Essays, to the Editor of the Edinburgh Medical and Surgical Journal. Edinburgh Medical and Surgical Journal, vol. xi. p. 431.

1818. An Account of the Extirpation of a Tumour of the Neck, engaging the Parotid Gland. Transactions of the Royal College of Physicians of Ireland, vol. ii. p. 101.

1818. Observations on Varix and Varicose Inflammation. Transactions of the Royal College of Physicians of Ireland, vol. ii.

1818. Case of Incurable Disease of the Arm, arising from extraordinary Circumstances. Transactions of the Royal College of Physicians of Ireland, vol. ii.

1818. Observations on the Symptoms and specific Distinctions of Venereal Diseases, interspersed with Hints for the more effectual Prosecution of the present Inquiry into the Use and Abuses of Mercury in their Treatment. One volume, 8vo.

1819. Case of Amputation at the Hip-Joint, for the Removal of an Osteo-sarcomatous Tumour. Transactions of the Royal College of Physicians of Ireland, vol. iii.

1819. Account of a Case of Cynanche Laryngea, in which the Operation of Tracheotomy was performed with Success; and a Case of Abscess between the Œsophagus and Cervical Vertebræ, obstructing Deglutition in which the same Operation was unsuccessful; with Remarks on the appropriate Treatment of similar Cases. Transactions of the Royal College of Physicians of Ireland, vol. iii.

1822. Case of Strangulated Hernia, occasioned by a Double Stricture in a Sac of an Hour glass Shape. Dublin Hospital Reports, vol. iii.

1824. Six Cases of Tetanus, accompanied by Observations on the leading Symptoms of that Disease, with the View of ascertaining its primary Seat, and most appropriate Mode of Treatment. Transactions of the College of Physicians of Ireland, vol. iv.

must state our conviction, that he never permitted selfish feelings to influence him in his actions. This we shall enter into no arguments to prove ; but that love for his profession, and a desire for its improvement, were his ruling motives, the following extract from his will, relating to his noble bequest to the Royal College of Surgeons of Ireland, will sufficiently show :

" In my will, dated the 11th of February, 1849, I bequeathed £3000 to the College of Surgeons in Ireland, the interest arising from which sum is to be disposed of in the following manner:

" Every fourth year, after the investment of this sum in the funds of the College, a premium of £200, to be adjudged by the council of the College for the best essay, and £100 for the second best essay on the following subject:

" 1st. The state of the medical profession, in its different departments of physic, surgery, and pharmacy, in Great Britain and Ireland, at the time of the writing of these prize essays.

" 2nd. The state of the hospitals and schools of medicine, surgery, and pharmacy.

" 3rd. The state and mode of examination, or of testing the qualifications of candidates of the different licensing colleges or corporations in medicine, surgery, and pharmacy.

1825. Second Edition of the Essay on Venereal Diseases, and the Uses and Abuses of Mercury. 8vo.

1832. Observations on the Use of Tracheotomy in chronic Diseases of the Larynx, illustrated by Cases. Dublin Journal of Medicine, vol. ii.

1833. On Inflammatory Affections of the Brain and its Membranes. Dublin Journal of Medicine, vol. iv.

1833. Account of an Operation for securing the Gluteal Artery. Dublin Journal of Medicine, vol. iv.

1836. An Essay on the Origin and Nature of Tuberculous and Cancerous Diseases. Read to the Medical Section of the British Association, August 23, 1836.

1837. Observations on Mr. Colles' Practical Observations on the Venereal Disease and the Use of Mercury. Dublin Medical Journal, vol. xii.

1838. Observations on Sciatica and other Neuralgic Affections, with a consideration of their frequent origin from a disordered State of the Stomach, interspersed with some novel views respecting the Origin of Gall-stones. Both Diseases exemplified by the Author's own Case, together with an Account of the Waters of Bagnères de Bigorre and Barége in their treatment. Dublin Medical Journal, vol. xiii.

1838. Summary of Mr. Carmichael's Views of the Venereal Cases in which Mercury is admissible and is not admissible. Dublin Medical Journal, vol. xiii.

1840. Observations on a Point of some Importance in Medical Ethics. Medical Press, July 22, 1840.

1840. Letter canvassing the Merits and Demerits of Mr. Warburton's Bill on Medical Reform. Medical Press, November, 18, 1840.

1841. Letter to Sir Robert Peel, on a Plan of Medical Reform and Reorganization of the Medical Profession, without subverting the existing Colleges of Physic and Surgery. 8vo.

1842. Clinical Lectures on Venereal Diseases, delivered in 1840, by Richard Carmichael, and reported by Samuel Gordon. Revised by Richard Carmichael. Illustrated by Engravings of the different Forms of Eruption. 1 vol. 8vo.

"Under these three heads the authors will please to make such suggestions as may occur to them respecting the improvement of the profession, with the view of rendering it more useful to the public, and a more respectable body than it is at present. In these suggestions the authors will please to consider the preliminary and moral education of medical and surgical students, as well as the best mode of conducting their professional studies. In considering the third head, or mode of testing the qualifications of candidates by the licensing bodies, the authors will please to consider the most practicable mode of rendering the examinations as demonstrative as possible, i.e. in anatomy, by having the dead subject placed before the candidate; in chemistry, botany, and pharmacy, specimens of minerals, plants, and pharmaceutical preparations placed before him; and, in the practice of physic and surgery, the candidate to be placed before the patients in the wards of an hospital, as the testator is certain that this will afford the most certain and only true mode of ascertaining the qualification of candidates.

"The Council of the College (if they agree to act on this proposal) will please to give one year's notice in the public papers and medical journals; and that all competitors for the prizes offered shall send in their essays three months before the day (the first Monday in May every fourth year); upon which day the Council shall pronounce their judgment. The name and address of each author, with a device corresponding to that on his essay, to be enclosed in a sealed letter, in the manner usually adopted for all prize questions.

"The successful essays, or (if too long) portions of them, to be read to the assembled College, at which meeting its licentiates, and all medical students, shall be permitted to attend.

"Should the Council not deem any of the essays worthy of a reward, they are at liberty and authorized to postpone the grant of premium until the termination of the next four years; and, as at this period the interest of the capital will be doubled, the reward of the two best essays may also be doubled, i.e. £400 for the best, and £200 for the second best.

"On handing the sum mentioned, of £3000, to the College, my trustees will please to have a legal guarantee that the provisions above stated will be carried into effect, as well as the publication of both of the prize essays, to the extent each of 700 copies, to be disposed of in the following manner:—Copies to be sent, free of expense, to the presidents, vice-presidents, councillors, or governing members of all the medical colleges or corporations of the United Kingdom; the authors of the successful essays to be entitled to twenty-five copies each; the remainder to be sold, the produce of which to go to the premium fund. Copies should also be sent to all cabinet ministers and members of the Privy Council in both countries.

"Should the Council neglect to comply with the above provisions, so as not to carry into effect the object and spirit of the testator in making this bequest, it is his will and pleasure that the interest thus accumulated shall be handed to the Medical Benevolent Fund

of Ireland; and his trustees will take especial care that, on giving the principal sum to the College, legal provision shall be made to carry this arrangement into effect."

The enthusiasm by which Mr. Carmichael was characterized in the pursuit of any object that he undertook throughout his life was especially manifested in the question of medical reform. He may be said to have formed the Medical Association of Ireland, a congress of physicians and surgeons, founded to promote the attainment of the alterations in the profession that he sought for. In 1839 he addressed the members of it, as their President, setting forth the views he held; and in 1840 he placed £500 at the disposal of the Council of the Association for the furtherance of these views. No part of this donation was expended by that body, and on its dissolution he presented the entire sum to the Medical Benevolent Fund Society of Ireland. This princely act of charity,—a charity that in him "vaunted not itself, and was not puffed up,"—was, at the time, of the utmost value to the Society, then in its infancy, enabling it almost immediately afterwards, "to commence the long-wished-for and interesting work of administering to the necessities of those for whose use the Society was established." At the next meeting of the Society, which was held on the 7th of June, 1847, the following resolution was passed:—"That the cordial thanks of this meeting, and of the Society at large, are justly due, and are hereby given, to Richard Carmichael, Esq., for his munificent donation of £500." He not only helped to progress this most important and benevolent Society(*a*) with his purse, but from its very foundation he devoted much of his time to it, having been, from the first, an active member of the committee; and his last public act was to preside at the annual meeting of the Society, held but a short month before his death. Moreover, it may be truly said that his benevolence to it did not cease with his life, for by his will he bequeathed to it the sum of £4500, thus placing the Society above any fear of failure in the noble objects for which it was instituted.

In the year 1812 Mr. Carmichael became a member of the Royal Irish Academy, and in 1820 was elected to serve on the Council as a member of the Committee of Science, on which he remained for

(*a*) We feel that we should be guilty of a dereliction of duty, were we to allow any opportunity to pass without endeavouring to impress upon our large body of subscribers the claims which the Medical Benevolent Fund Society of Ireland has upon them. It would be out of place for us to say anything of the truly charitable feelings for which our profession has been, in all ages, so remarkable. And this is a truly charitable institution, calling on the profession for aid; truly charitable we say, for its bounty is freely bestowed, without any preference for those who may have been subscribers to its funds. At present we shall merely call their notice to the bright example set them by the subject of the Memoir to which this note is appended, and say, let each, as far as his means permit him, fulfil the scriptural precept, "go and do likewise."

several years, until his increasing professional practice no longer permitted him to attend to its duties. He was also a member of the Royal Dublin Society. In February, 1835, he received the high honour of being nominated a Corresponding Member of the Royal Academy of Medicine of France; a distinction conferred on but few foreigners, and those few invariably selected from the most celebrated medical men in each country. We believe that he was the first Irishman who was thus distinguished.

Twice, during his career, Mr. Carmichael was presented with addresses by his professional brethren. On the first occasion, which was in 1841, the address, which was signed by 410 physicians and surgeons, was accompanied by a piece of plate. This remarkable proof of the esteem in which he was held by those who had the best right to know him was called forth by his gift of £500 to the Medical Association of Ireland, to which we have before alluded; it expressed their feelings of his untiring zeal and devotion in the advancement not only of the scientific but of the general interests of his profession. The second address was presented to him on the 20th of June, 1846, at the termination of his Presidentship, for the third time, of the Royal College of Surgeons of Ireland; it was signed by 114 Fellows and Licentiates of the College, resident in Dublin, and was intended to mark "their estimation of the dignified, zealous, and able manner in which he discharged the important duties of President of the College; his unceasing exertions in promoting the best interests of the profession, and the kind encouragement which he on every occasion extended towards its junior members." In his reply to this address Mr. Carmichael announced an important step, as regarded his private practice for the future, which he had decided upon taking. This step, almost unexampled for its liberality, he announced in the following words:—"Since the termination of my year of Presidentship of the College (the third time I have had that honour), I have relinquished all practice, except in my own house, or out of doors in consultation with a qualified practitioner. This determination has in a great measure arisen from a wish to show a good example to my contemporaries, which I trust will in due time be followed for the benefit of their juniors."

Mr. Carmichael generally enjoyed excellent health, having had a naturally sound constitution, which his love for horse exercise tended to keep unimpaired. But for nearly two years, from 1827 to 1829, he suffered much from gastric derangements, gall-stones, and sciatica; until at length, in June of the latter year, he was compelled to leave Dublin, and proceed to the south of France, where he resided for a month at Bagnères de Bigorre, and for six weeks at the baths of Barège: he afterwards took a tour on horseback through the valleys of the Pyrences, and returned home quite restored to health(*a*). From this time he continued uninterruptedly

(*a*) See his essay on the symptoms of his own case in the Dublin Journal of Medicine, vol. xiii. p. 286.

in the active exercise of his profession until the very day in which his life was so suddenly terminated. For many years he had been in the habit of residing with his family during the summer months at a country residence, selecting some place in the neighbourhood of Dublin sufficiently near to town to permit him to ride into his business in the morning, and again return on horseback in the afternoon, after his day's work was over. In the year 1849 he chose for this purpose a residence near the small village of Sutton, on the south side of the Hill of Howth, about seven miles from town by the road. The back waters of the Liffey and the river Tolka meet near here, and this portion of the Hill is separated from the Dublin shore, beyond Clontarf, by a long strand about half a mile in width, which lies behind an elevated bank called the North Bull; this strand, together with the Bull, is completely covered by the tide at high water, but is left nearly dry when the tide is out, so that were it practicable to cross it, the distance from town would be shortened by nearly two miles; but a rapid stream, from six to twelve feet deep, even at low water, throughout the greater part of its course, flows across it less than a quarter of a mile distant from the Sutton shore. In this stream, on the 8th of June, 1849, Mr. Carmichael was drowned.

The exact particulars of the manner in which he met his death have not been ascertained; but the following account, which is partly based on the testimony of two persons who witnessed the accident from a short distance, is believed by his family to be correct. On this evening he was detained in town until half past six o'clock, being somewhat later than his usual hour; and anxious, as it is conjectured, to shorten the distance, he attempted to ride across the strand. Having reached the bank of the stream, being a bold horseman and a good swimmer, and probably not aware of its depth, for it is very deceptive to the eye at the side at which he entered, he urged his horse onwards. The stream increases in depth, very gradually at first, but at the distance of about two perches from the bank it abruptly becomes from four to five feet deep. It is believed that the horse fell suddenly down this bank, and probably while in the act of falling struck Mr. Carmichael so as to stun him, for it would appear from the evidence of one of the witnesses examined at the inquest, and who reached the spot in about five minutes after the accident occurred, that he never rose to the surface. The body was not found until the fifth day afterwards, when it was discovered by fishermen who were looking for it, close to the spot where the accident occurred.

Thus was one of the most distinguished surgeons of our age cut off in a moment, though not in the midst of his career, for he lived the three score years and ten of man's allotted time in this world, yet while in the enjoyment of robust health, with his mind as active, and his hand as firm, as they had ever been. Of this we can ourselves bear testimony, for we happened to be in attendance with

him at the last operation he performed in private, the very day three weeks before his death(*a*).

To the biographical Memoir of such a man as Richard Carmichael we shall not append the high-flown language so commonly employed, like inscriptions on a monumental tablet, to adorn a character, it may be deservedly or not. We prefer to let a man's life be judged of by his actions, and *his* works speak for themselves. LIVING HE ADORNED HIS PROFESSION, AND DYING HE WAS NOT FORGETFUL OF IT.

(*a*) The following letter of condolence was addressed to his widow by the College of Physicians of Ireland:

"MADAM,—We, the President and Fellows of the King and Queen's College of Physicians, beg to tender you our condolence on the late deplorable event which has deprived the surgical profession of one of its most distinguished members; and we trust that, although Mr. Carmichael was unconnected with our body, you will accept this expression of our heartfelt sorrow for your loss, and our high estimation of his private and professional worth.

"Mrs. Carmichael."

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